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**Natural Sciences and Engineering
Research Council of Canada**

Information/Communique



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INFORMATION

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UNIVERSITY RESEARCH GETS \$28 MILLION BOOST FROM NSERC

Grants totalling **\$28.1 million** have recently been awarded to Canadian university professors for R & D in areas of socio-economic benefit to the country, announced Gordon MacNabb, President of the Natural Sciences and Engineering Research Council (NSERC).

The distribution of grants and grant funds across the selected areas is as follows:

LA RECHERCHE UNIVERSITAIRE REÇOIT \$28 MILLIONS DU CRSNG

M. Gordon MacNabb, Président du Conseil de recherches en sciences naturelles et en génie, annonce l'octroi récent de **\$28,1 millions** en subventions à des professeurs d'universités canadiennes pour la R et D dans des domaines ayant des retombées socio-économiques pour le Canada.

Les subventions et les fonds ont été répartis comme suit entre les domaines choisis:

	<u>Number/ Nombre</u>	<u>Million \$/ Millions \$</u>
Biotechnology/Biotechnologie	63	3.3
Communications & Computers/Télécommunications et informatique	47	3.4
Energy/Énergie	134	7.8
Environmental Toxicology/Toxicologie de l'environnement	64	3.1
Food/Agriculture/Alimentation et agriculture	88	4.3
Oceans/Océans	51	2.8
Open/Ouvert	<u>50</u>	<u>3.4</u>

497 28.1

.../2



The Open field includes research on subjects such as robotics, forestry and forest products, acid rain abatement, steelmaking processes, lasers, industrial productivity and development.

NSERC's \$28.1 million investment in university R & D was made possible by the Strategic Grants program which is now six years old. The initiative was originally launched to increase research in certain identified areas and to promote the transfer of university-based technology to the user sector.

NSERC is Canada's largest research granting agency. In 1982-83 alone, it awarded more than 12,000 grants and scholarships involving \$238.7 million.

A list of the strategic grants awarded in the recent competition is appended.

For additional information on the Strategic Grants Program, contact:

Marilyn A. Taylor
(613) 993-3659

Sous la rubrique du thème ouvert on retrouve des projets de recherche traitant de la robotique, de la foresterie et des produits de la forêt, de la suppression des pluies acides, des procédés sidérurgiques, des lasers, de la productivité et du développement industriels.

Cet investissement de \$28,1 millions par le CRSNG dans la R et D universitaire s'effectue grâce au programme des subventions thématiques. Le programme a été lancé il y a six ans dans le but d'augmenter la recherche dans certains domaines choisis et d'effectuer le transfert de la technologie des universités aux utilisateurs.

Le CRSNG est le principal organisme subventionnaire du Canada. En 1982-1983, le Conseil a accordé plus de 12 000 subventions et bourses, pour un total de \$238,7 millions.

On trouvera ci-joint la liste des subventions thématiques accordées lors du récent concours.

Pour de plus amples informations sur le programme des subventions thématiques, veuillez communiquer avec:

Marilyn A. Taylor
(613) 993-3659

STRATEGIC GRANTS / SUBVENTIONS THÉMATIQUES

List of Recipients / Liste des bénéficiaires

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Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Ahlborn, B. Physics British Columbia	Rotary engine developments 3yr - 3rd Inst.	Individual	41,589
Alper, H. Chemistry Ottawa	Gas Chromatograph	Equipment	23,226
Alper, H. Chemistry Ottawa	Novel catalytic processes for synthetic fuels and chemicals * with B.A.Morrow, J.A.Roustan(Ottawa) 3yr - 1st Inst.	Group	43,000
Atherton, D.L. Physics Queen's	Magnetic inspection techniques for pipelines 3yr - 2nd Inst.	Individual	74,147
Avedesian, M.M. Chemical Eng. McGill	Fluidized bed recovery of Kraft black liquor * with A.S.Mujumdar(McGill) 3yr - 1st Inst.	Group	31,000
Barbery, G.A. Mines & métallurgie Laval	Flocculation sélective des fines de charbon 3ans - 1er vers.	Individuelle	31,480
Barbery, G.A. Mines & métallurgie Laval	Granulomètre automatique à sédimentation	Appareillage	35,180
Barradas, R.G. Chemistry Carleton	Low temperature investigations of electrode processes in the lead acid battery system 3yr - 2nd Inst.	Individual	42,856
Becker, H.A. Chemical Eng. Queen's	Fundamental studies and system development for combustion of solid and gaseous fuels 3yr - 3rd Inst.	Individual	59,223
Becker, H.A. Chemical Eng. Queen's	Elemental (C,H,N,S,O) analyzer and microbalance	Equipment	63,652
Beeckmans, J.M. Chem./Biochem. Eng Western Ontario	Development of a simple dual-bed fluidized gasifier for biomass and other pyrolyzable wastes 3yr - 2nd Inst.	Individual	24,274
Bergougnou, M.A. Chemical Eng. Western Ontario	Ultrafast pyrolysis (ultrapYROLYSIS) of heavy oils and solid fuels 3yr - 2nd Inst.	Individual	52,343
Besant, R.W. Mechanical Eng. Saskatchewan	Low energy building monitoring, analysis and simulation * with G.J.Schoenau,G.H.Green(Sask.) 3yr - 2nd Inst.	Group	80,560
Bolton, J.R. Chemistry Western Ontario	Nitrogen laser with dye laser accessory	Equipment	20,660

Energy / Energie - 1983-84 (continued / suite)

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Bolton, J.R. Chemistry Western Ontario	Photochemical solar energy conversion in linked donor-acceptor molecules * with A.C.Weedon, M.J.Stillman(Western Ontario) 3yr - 1st Inst.	Group	112,000
Boorman, P.M. Chemistry Calgary	Studies of hydrotreating catalysts * with R.A.Kydd(Calgary) 3yr - 2nd Inst.	Group	34,980
Bosisio, R.G. Génie électrique Ecole Polytechnique	Caractérisation et chauffage des mélanges par l'énergie hyperfréquence * avec C.Akyel(Ecole Polytech), T.K.Bose(Qué.-Trois Rivières) 3ans - 3e vers.	Groupe	53,472
Boulos, M.I. Génie chimique Sherbrooke	Production du silicium de haute pureté pour les piles photovoltaïques 3ans - 3e vers.	Individuelle	55,255
Brodie, D.E. Physics Waterloo	Preparation, structure and electronic properties of semiconducting films for photovoltaic applications * with A.E.Dixon, J.D.Leslie(Waterloo) 3yr - 3rd Inst.	Group	40,163
Brooker, M.H. Chemistry Memorial	Spectroscopic studies battery electrodes and electrolytes 3yr - 3rd Inst.	Individual	25,595
Buckmaster, H.A. Physics Calgary	Clay treatment and stabilization studies for enhanced oil recovery 3yr - 1st Inst.	Individual	46,000
Capjack, C.E. Electrical Eng. Alberta	Computer simulation codes for laser inertial confinement fusion experiments 3yr - 3rd Inst.	Individual	38,262
Carty, A.J. Chemistry Waterloo	Laser system and mass spectrometer for laser isotope separation of Zr-90 for use in Candu reactors	Equipment	46,950
Carty, A.J. Chemistry Waterloo	Laser isotope separation of zirconium-90 for use in fuel and pressure tubes of Candu reactors * with G.Scoles, T.E.Gough, N.R.Isenor(Waterloo) 3yr - 2nd Inst.	Group	87,641
Chatt, A. Chemistry Dalhousie	Studies on physico-chemical forms of neptunium in groundwater 3yr - 1st Inst.	Individual	50,980
Chatt, A. Chemistry Dalhousie	Anoxic and radioactive glove box system	Equipment	37,972

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Cheng, K.C. Mechanical Eng. Alberta	Refrigerant charged phase change systems for low grade waste heat recovery in cold region 3yr - 3rd Inst.	Individual	35,648
Childs, R.F. Chemistry McMaster	Solar energy storage by a photochemical latent heat approach 3yr - 3rd Inst.	Individual	43,966
Chin, S.L. Physique Laval	Study of some optical problems in the separation of deuterium from CF ₃ H/CF ₃ D using a TEA-CO ₂ laser 3ans - 2e vers.	Individuelle	39,750
Chor-net, E. Génie chimique Sherbrooke	Hydroraffinage catalytique des fractions issues de la liquéfaction de la biomasse et de la tourbe: Nouvelles approches basées sur des réacteurs à jet et catalyseurs homogènes et en suspension colloïdale 3ans - 1er vers.	Individuelle	56,800
Chor-net, E. Génie chimique Sherbrooke	Compresseur d'hydrogène et automatisation du système chromatographique existant	Appareillage	21,261
Colborne, W.G. Mechanical Eng. Windsor	Computer simulation and retrofit strategy for existing houses * with N.W.Wilson, T.W.McDonald, W.T.Kierkus(Windsor) 3yr - 1st Inst.	Group	47,620
Conway, B.E. Chemistry Ottawa	Evaluation of electrocatalysts for water electrolysis and H ₂ /O ₂ fuel cells 3yr - 1st Inst.	Individual	71,000
Conway, B.E. Chemistry Ottawa	High power potentiostat	Equipment	6,095
Cormack, D.E. Chemical Eng. Toronto	Numerical simulation of hydraulic fractures for hydrocarbon recovery 3yr - 1st Inst.	Individual	50,460
Costerton, J.W. Biology Calgary	Strategy to control microbial problems in water flood oil recovery operations * with N.C.Wardlaw(Calgary) 3yr - 3rd Inst.	Group	84,366
Dale, J.D. Mechanical Eng. Alberta	The Alberta home heating research facility * with T.W.Forest, G.W.Sadler, D.J.Wilson(Alberta) 3yr - 2nd Inst.	Group	54,092
Dawson, G.E. Electrical Eng. Queen's	Energy efficient drives for transit systems * with A.R.Eastham, V.I.John, P.C.Sen(Queen's) 3yr - 3rd Inst.	Group	39,926

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
De Lasa, H.I. Chemical Eng. Western Ontario	Pseudoadiabatic reactor configuration for methanol conversion 3yr - 1st Inst.	Individual	51,963
De Lasa, H.I. Chemical Eng. Western Ontario	Advanced fluidized bed catalytic cracking technology 3yr - 3rd Inst.	Individual	49,777
Desnoyers, J.E. Chimie Sherbrooke	Utilisation des microémulsions pour l'extraction et la dispersion des huiles * avec J.K.Saunders(Sherbrooke) 3ans - 3e vers.	Groupe	77,237
Dewan, S.B. Electrical Eng. Toronto	Efficient power conditioning system (PCS) for photovoltaic arrays 3yr - 3rd Inst.	Individual	57,631
Dhillon, B.S. Mechanical Eng. Ottawa	Nuclear and conventional energy production and transmission systems reliability and safety assurance methods 3yr - 1st Inst.	Individual	30,000
Dignam, M.J. Chemistry Toronto	Hybrid photovoltaic, photochemical cell for solar energy storage 3yr - 3rd Inst.	Individual	44,560
Dignam, M.J. Chemistry Toronto	Synthesis and evaluation of novel metal catalysts * with I.G.Csizmadia, R.H.Morris, M.Moskovits, D.H.Napier, G.A.Ozin, J.C.Polanyi, J.Powell(Toronto) 3yr - 2nd Inst.	Group	396,440
Drake, J.E. Chemistry Windsor	Sulphur-containing compounds as potential additives for lubricants 3yr - 1st Inst.	Individual	35,980
Dullien, F. Chemical Eng. Waterloo	Development of new core analysis * with I.Chatzis, I.F.Macdonald(Waterloo) 3yr - 1st Inst.	Group	77,133
Eaton, D.R. Chemistry McMaster	Thermal energy storage using cobalt/oxygen complexes * with B.Latto(McMaster) 3yr - 3rd Inst.	Group	35,588
El-Hawary, M.E. Electrical Eng. Tech. Univ. N.S.	Modeling and optimization for electric energy systems operations 3yr - 3rd Inst.	Individual	38,024
Flanagan, R.C. Mechanical Eng. Ottawa	Design and testing of SMC hubs for mechanical energy storage rotors * with M.B.Munro(Ottawa) 2yr - 2nd Inst.	Group	38,266

Energy / Energie - 1983-84 (continued / suite)

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Fyfe, C.A. Chemistry Guelph	Synthesis and modification of zeolite catalysts and their characterization by high-resolution solid-state NMR spectroscopy 3yr - 2nd Inst.	Individual	22,896
Glass, I.I. Aerospace Studies Toronto	Advanced modelling and diagnostic techniques in swirl combustors 3yr - 3rd Inst.	Individual	50,103
Gough, D.I. Physics Alberta	Magnetometer array and magnetotelluric studies of geothermal areas 3yr - 2nd Inst.	Individual	44,308
Grace, J.R. Chemical Eng. British Columbia	Circulating bed fluidization 3yr - 2nd Inst.	Individual	21,730
Graham, W.A.G. Chemistry Alberta	Carbon-hydrogen bond activation by transition metals 3yr - 1st Inst.	Individual	35,000
Gregory, B.C. INRS - Energie Québec - INRS	Appareillages pour les diagnostics avancés en développement pour le Tokamak de Varennes	Equipment	60,330
Guillet, J.E. Chemistry Toronto	Light-gathering polymer coatings for use in photovoltaic cells * with D.A.Holden(Waterloo) 3yr - 1st Inst.	Group	66,500
Guthrie, R.I.L. Mining/Metal. Eng. McGill	Optimisation studies of steel plant processing furnaces and vessels * with M.E.Salcudean(Ottawa) 3yr - 2nd Inst.	Group	73,352
Haering, R.R. Physics British Columbia	Phase conversion in Li/MoS ₂ batteries 3yr - 2nd Inst.	Individual	53,742
Hileman, O.E. Chemistry McMaster	Studies on the chemistry of dual catalyst liquid redox desulfurization technologies 3yr - 3rd Inst.	Individual	39,117
Hill, P.G. Mechanical Eng. British Columbia	Combustion diagnostic instrumentation	Equipment	78,024
Hill, P.G. Mechanical Eng. British Columbia	Flame speed enhancement for alternative fuels in I.C. engines * with R.L.Evans(British Columbia)	Group	68,960
Hiscott, R.N. Earth Sciences Memorial	Fossil fuel potential of carboniferous pull-apart basins, Nfld. and Gulf of St. Lawrence * with J.A.Wright, H.G.Miller(Memorial), P.L.Dean(Dept. of Mines and Energy, Labrador) 3yr - 2nd Inst.	Group	122,769

Energy / Energie - 1983-84 (continued / suite)

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Hollands, K.G.T. Mechanical Eng. Waterloo	Application of time-series and graph-theoretic methods to the analysis of solar energy systems * with M.Chandrashekar, T.E.Unny(Waterloo) 3yr - 3rd Inst.	Group	44,465
Hornof, V. Chemical Eng. Ottawa	Enhanced oil recovery using lignin waste products * with G.H.Neale(Ottawa) 3yr - 1st Inst.	Group	40,000
Hron, F. Physics Alberta	Computer inversion of geophysical data using inverse methods and direct numerical modeling * with M.Razavy(Alberta) 3yr - 2nd Inst.	Group	82,680
Hsu, T.R. Mechanical Eng. Manitoba	Permeability enhancement of oil sands by effective in-situ fracturing * with J.D.Scott(Alberta), D.K.Sinha(Manitoba) 3yr - 2nd Inst.	Group	138,860
Hudgins, R.R. Chemical Eng. Waterloo	Improved alcohol synthesis through periodic operation * with P.L.Silveston(Waterloo) 3yr - 2nd Inst.	Group	18,974
Hyne, J.B. Chemistry Calgary	Aquathermolysis of organosulphur compounds of heavy oils 3yr - 3rd Inst.	Individual	54,482
Irish, D.E. Chemistry Waterloo	Studies of electrolytes and redox processes of importance in power research programs * with G.E.Toogood(Waterloo)	Group	34,500
Jervis, R.E. Chemical Eng. Toronto	Compositional characterization of combustion condensate particulates from energy sources 3yr - 1st Inst.	Individual	30,495
Jones, F.W. Physics Alberta	A study of sources and uses of geothermal energy in Alberta 3yr - 2nd Inst.	Individual	53,000
Kaliaguine, S. Génie chimique Laval	Titrimètre automatique	Appareillage	13,000
Kaliaguine, S.C.F. Génie chimique Laval	Production et valorisation d'huiles pyrolytiques à partir du bois 3ans - 3e vers.	Individuelle	50,502
Kind, R.U. Mech. & Aeronaut. Carleton	Flow in small centrifugal fans 3yr - 1st Inst.	Individual	12,150
King, H.W. Eng. Physics Tech. Univ. N.S.	Plasma spray ceramic coating unit	Equipment	78,033

Energy / Energie - 1983-84 (continued / suite)

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
King, H.W. Eng. Physics Tech. Univ. N.S.	Plasma sprayed ceramic coatings for use in coal combustion systems * with W.F.Caley(T.U.N.S.) 3yr - 1st Inst.	Group	46,980
Lavers, J.D. Electrical Eng. Toronto	Portable data acquisition and diagnostic facility for electric arc furnace disturbances 2yr - 1st Inst.	Individual	49,028
Leblanc, R.M. Photobiophysique Qué.-Trois-Riv.	Etude de cellules photovoltaïques organiques à base de pigments photosynthétiques 3ans - 2e vers.	Individuelle	44,838
Lessard, J. Chimie Sherbrooke	Electrohydrogénation de molécules organiques * avec F.M.Kimmerle(Sherbrooke) 3ans - 3e vers.	Groupe	43,252
Lever, A.B.P. Chemistry York	Design of a metal-organic oxygen reduction electrocatalyst * with C.C. Leznoff(York), R.D.Venter(Toronto) 3yr - 2nd Inst.	Group	57,198
Lin, S. Mechanical Eng. Concordia	A multiple, solar, air and storage, source heat pump for cold climates * with K.I.Krakow(Concordia) 3yr - 2nd Inst.	Group	46,583
Manchester, F.D. Physics Toronto	Alloy development for hydrogen storage in the hydrogen economy * with G.C.Weatherly,C.B.Alcock, J.S.Hewitt,C.A.Ward(Toronto) 2yr - 2nd Inst.	Group	100,700
Martel, J.G. INRS - Energie Québec - INRS	Etudes technologiques et scientifiques reliées à la fusion par confinement magnétique dans un dispositif torique * avec H.Van Andel, V.M.M.Glaude(Montréal), B.C.Gregory,J.M.Larsen, B.L.Stansfield,B.Terreault(Qué.- I.N.R.S.) 3ans - 3e vers.	Groupe	204,381
Masliyah, J. Chemical Eng. Alberta	Application of inclined plate settler to separation of bitumen- sand slurry * with K.Nandakumar(Alberta) 2yr - 1st Inst.	Group	45,850
Meyer, J. Physics British Columbia	1 GHz real-time oscilloscope	Equipment	49,184
Meyer, J. Physics British Columbia	Physical processes in laser plasma interaction and submicron wavelength scaling * with B.Ahlborn,A.J.Bannard,F.L.Curzon, A.K.Ng(B.C.) 3yr - 2nd Inst.	Group	153,700

Energy / Energie - 1983-84 (continued / suite)

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Moffat, J.B. Chemistry Waterloo	Direct partial oxidation of methane to methanol over new heteropoly catalysts 2yr - 1st Inst.	Individual	25,000
Moffat, J.B. Chemistry Waterloo	Gas chromatograph with mass-selective detector	Equipment	11,488
Morrison, S.R. Physics Simon Fraser	Adsorption and catalysis on metal sulphide layer compounds * with R.F.Frindt, J.C.Irwin (Simon Fraser) 3yr - 2nd Inst.	Group	86,920
Netsch, H. Génie mécanique Laval	Turbine hydro-électrique de faible et moyenne puissance complètement automatique * avec P.Viarouge (Laval) 3ans - 3e vers.	Groupe	20,200
Offenberger, A.A. Electrical Eng. Alberta	Laser fusion research 3yr - 3rd Inst.	Individual	112,885
Offenberger, A.A. Electrical Eng. Alberta	Ultrafast X-ray streak camera	Equipment	100,000
Parsons, R.R. Physics British Columbia	RF substrate bias system	Equipment	8,200
Parsons, R.R. Physics British Columbia	The utilization of planar magnetron sputtering: Thin films for solar energy applications * with C.F.Schwerdtfeger, R.Barrie (B.C.) 3yr - 2nd Inst.	Group	55,120
Pepin, H. INRS - Energie Québec - INRS	Production, transport et contrôle des électrons dans les expériences d'interaction laser CO2-matière * avec R.Decoste, P.Lavigne, F.Martin, T.W.Johnston (Qué-I.N.R.S.), P.A.Bélanger (Laval) 3ans - 3e vers.	Groupe	148,533
Puddephatt, R.U. Chemistry Western Ontario	Catalysis of the water gas shift reaction and Fischer-Tropsch synthesis using binuclear catalysis 3yr - 2nd Inst.	Individual	28,090
Reid, J. Eng. Physics McMaster	Laser investigations of tritium detection and isotope separation * with P.E.Jessop, B.K.Garside (McMaster) 3yr - 2nd Inst.	Group	37,259
Rempel, G.L. Chemical Eng. Waterloo	Development of hydrogenation catalysts 3yr - 3rd Inst.	Individual	36,373

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Robillard, L. Génie civil Ecole Polytechnique	Effet des basses températures sur les systèmes de refroidissement utilisés dans les réseaux électriques * avec P.Vasseur(Ecole Polytechnique) 3ans - 1er vers.	Groupe	50,100
Roy, C. Génie chimique Sherbrooke	Saccharification de la biomasse par pyrolyse à pression réduite suivie d'une hydrolyse * avec H.Ménard, E.Chornet, B.L.P.Cayrol(Sherbrooke) 3ans - 3e vers.	Groupe	42,777
Roy, J.C. Chimie Laval	Etude de la radioactivité naturelle dans le fleuve St-Laurent et ses affluents 3ans - 3e vers.	Individuelle	8,318
Scott, D.S. Chemical Eng. Waterloo	Development of an atmospheric pressure flash pyrolysis process 2yr - 1st Inst.	Individual	70,000
Scott, D.S. Chemical Eng. Waterloo	Components for preparative liquid chromatograph	Equipment	18,695
Selvadurai, A.P.S. Civil Engineering Carleton	Thermo-mechanical interactions in a container-buffer-rockmass system in a nuclear waste disposal vault during water uptake 3yr - 1st Inst.	Individual	65,000
Sharaf, A.M. Electrical Eng. New Brunswick	Energy efficient motor drives for industrial applications * with C.D.Doraiswami, D.M.Luke, W.J.Smolinski(U.N.B.) 3yr - 2nd Inst.	Group	41,976
Skarsgard, H.M. Physics Saskatchewan	Fusion research with STOR-I and STOR-M * with A.Hirose(Sask.) 3yr - 3rd Inst.	Group	118,826
Smy, P.R. Electrical Eng. Alberta	Enhancement of flame and transport processes in pulsed plasma plugs 3yr - 1st Inst.	Individual	47,710
Sorensen, T.S. Chemistry Calgary	A study of the chemical reactions occurring in the liquid products during thermal coking of bitumen 3yr - 2nd Inst.	Individual	19,080
Stangeby, P.C. Aerospace Studies Toronto	Tritium retention in fusion reactor materials * with A.A.Haasz, J.E.Robinson(Toronto) 3yr - 3rd Inst.	Group	89,120
Stobart, S.R. Chemistry Victoria	Synthetic lube oils. Facilitation of nucleophilic addition to polyaromatics by metal complexation 3yr - 3rd Inst.	Individual	54,066

Energy / Energie - 1983-84 (continued / suite)

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Stott, M.J. Physics Queen's	Theoretical study of materials problems involving hydrogen in metals * with E.Zayemba(Queen's) 3yr - 2nd Inst.	Group	29,786
Strausz, O.P. Chemistry Alberta	Organic geochemical studies of Canadian crude oils 3yr - 3rd Inst.	Individual	106,943
Strom-Olsen, J.O. Physics McGill	Equipment for hydrogen loading in metallic glasses	Equipment	19,445
Strom-Olsen, J.O. Physics McGill	Hydrogen storage in metallic glasses * with W.B.Muir, R.Harris(McGill) 2yr - 1st Inst.	Group	54,780
Tanaka, H. Civil Engineering Ottawa	Air infiltration of high-rise buildings for energy calculation * with Y.Lee(Ottawa) 3yr - 1st Inst.	Group	29,160
Tidwell, T.T. Chemistry Toronto	Chemical characterization of wood conversion to liquid fuels * with D.G.B.Boocock(Toronto) 3yr - 2nd Inst.	Group	29,680
Timusk, T. Physics McMaster	Study of the propagation of thermal radiation through insulating materials 3yr - 2nd Inst.	Individual	13,780
Toguri, J.M. Metal/Mat. Science Toronto	Secondary recovery of aluminum * with H.W.Smith(Toronto) 3yr - 2nd Inst.	Group	56,180
Trass, O. Chemical Eng. Toronto	Grinding and beneficiation of coal	Individual	45,740
Trass, O. Chemical Eng. Toronto	Coal and heavy oil processing in a grinder-reactor	Individual	39,760
Venart, J.E.S. Mechanical Eng. New Brunswick	Bivalent heat pumps with storage; I agricultural applications to greenhouse heating * with A.C.Mendes de Sousa(N.B.) 3yr - 3rd Inst.	Group	52,818
Venart, J.E.S. Mechanical Eng. New Brunswick	Pressure liquified fuel tank thermal response * with A.C.Mendes De Sousa, F.R.Steward(New Brunswick) 3yr - 1st Inst.	Group	50,690
Venetsanopoulos, A. Electrical Eng. Toronto	Multidimensional techniques in geophysics 3yr - 1st Inst.	Individual	42,900

Energy / Energie - 1983-84 (continued / suite)

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Venter, R.D. Mechanical Eng. Toronto	Engineering development of a Canadian fuel cell technology * with D.McCammond,D.S.Scott, C.A.Ward,M.J.Dignam(Toronto), A.B.P.Lever(York) 3yr - 3rd Inst.	Group	249,535
Walker, R.G. Geology McMaster	Reservoir geometry and prediction of shallow marine sandstones, Alberta 3yr - 1st Inst.	Individual	58,480
Walsh, D. Physics McGill	Photovoltaic solar cell * with G.Donnay(McGill) 3yr - 3rd Inst.	Group	47,530
Ward, M.A. Civil Engineering Calgary	Increasing the use of fly ash in construction * with R.L.Day, R.C.Joshi,B.W.Langan(Calgary) 3yr - 1st Inst.	Group	150,440
Wertheimer, M.R. Génie-physique Ecole Polytechnique	Appareillage pour recherches sur le silicium amorphe, a-Si:H	Appareillage	66,039
Wertheimer, M.R. Génie-physique Ecole Polytechnique	Piles photovoltaïques à base de silicium amorphe (a - Si:H) * avec autres 3ans - 2e vers.	Groupe	195,761
West, G.F. Physics Toronto	Seismic tomography 3yr - 1st Inst.	Individual	62,400
White, M.A. Chemistry Dalhousie	Solid-solid phase transition materials for thermal energy storage 2yr - 1st Inst.	Individual	16,800
Wojciechowski, B.W. Chemical Eng. Queen's	Fischer tropesch and related syntheses * with R.W.Smith(Queen's) 3yr - 3rd Inst.	Group	52,283
Wynnyckyj, J.R. Chemical Eng. Waterloo	Energy economy in packed-bed, shaft type, reactors * with T.Z.Fahidy,R.R.Hudgins(Waterloo) 3yr - 2nd Inst.	Group	60,950

Environmental Toxicology / Toxicologie de l'environnement - 1983-84

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
ApSimon, J.W. Chemistry Carleton	Synthesis of polychlorodibenzo-p- dioxins and related species. National bank of standards of hazardous chemicals 3yr - 1st Inst.	Individual	55,000
Banister, E.W. Kinesiology Simon Fraser	Sensitivity of tests for acute and chronic exposure to organophosphate insecticides: cholinergic versus adrenergic effects * with P.Oloffs(Simon Fraser) 3yr - 2nd Inst.	Group	38,626
Bird, D.M. Ren. Resources McGill	Influence of PCB's and Mirex on male reproductive function in captive falcons 2yr - 2nd Inst.	Individual	14,310
Brown, D.L. Biology Ottawa	Effects of methyl mercury on the cytoskeleton in cultured neuronal cells * with K.R.Reuhl(N.R.C. Ottawa) 3yr - 1st Inst.	Group	60,000
Brown, L.M. Plant Science Western Ontario	The role of the greenish-gold algal flagellate Chrysochromulina breviturrita in odour production in acidic Canadian lakes * with K.H.Nicholls(Ontario Ministry of the Environment) 3yr - 1st Inst.	Group	30,000
Cameron, R.G. Pathology Toronto	Tissue culture facility for study of environmental toxicants: request for supplement	Equipment	20,000
Cameron, R.G. Pathology Toronto	Modulation by specific PCBs of hepatotoxic and carcinogenic responses * with S.H.Safe(Guelph), E.Farber(Toronto) 3yr - 2nd Inst.	Group	68,124
Cantwell, F.F. Chemistry Alberta	Free heavy metal ion speciation and complexing capacity in natural waters by ion exchange * with B.G.Kratochvil(Alberta) 3yr - 2nd Inst.	Group	19,610
Carty, A.J. Chemistry Waterloo	Methylation of lead and tin in the environment: Conversion of "Inorganic" lead (II) and tin salts to alkyllead (IV) and tin (IV) by microorganisms and active sediments * with Y.K.Chau, P.T.S.Wong(Canada Centre for Inland Waters) 3yr - 3rd Inst.	Group	29,647
Cole, D.E.C. Paediatrics Dalhousie	Effects of environmental sulfate on sulfate metabolism and calcium homeostasis 2yr - 2nd Inst.	Individual	17,806

Environmental Toxicology / Toxicologie de l'environnement - 1983-84
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Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Dixon, D.G. Biology Waterloo	Uptake, metabolism and toxicity of dietary and waterborne arsenicals to rainbow trout * with J.W.Hilton(Guelph) 3yr - 1st Inst.	Group	47,000
DuBow, M. Micro/Immunology McGill	The effect of genotoxic agents on movable genetic elements 3yr - 2nd Inst.	Individual	74,603
Duthie, H.C. Biology Waterloo	Calibration of sedimentary diatom analyses for evaluating the effects of acid precipitation on dilute lakes * with S.M.Smith(Waterloo) 3yr - 2nd Inst.	Group	33,867
Farant, J.P. Grad. Stud./Res. McGill	Study of potential biological indices of past exposures to lead in the environment * with J.-P.Weber(Centre Hospitalier-Laval) 3yr - 1st Inst.	Group	34,000
Freeze, R.A. Geological Sciences British Columbia	Risk assessment and design of data collection and monitoring networks at waste management sites * with J.L.Smith, D.L.Anderson, W.F.Caselton(British Columbia)F.D.Patton(Westbay Instruments Ltd.) 3yr - 1st Inst.	Group	42,000
Garside, E.T. Biology Dalhousie	Effects of selected heavy metals in relation to ambient acidity on structure and functions of freshwater fish exposed to persistent levels 3yr - 2nd Inst.	Individual	47,870
Harvey, H.H. Zoology Toronto	The mechanism of action of manganese on fishes, in the context of manganese mobilization from soils and sediments in response to acid precipitation 2yr - 2nd Inst.	Individual	31,336
Haynes, R.H. Biology York	Induction of genetic damage by environmental mutagens 3yr - 3rd Inst.	Individual	50,000
Huang, P.M. Soil Science Saskatchewan	Dynamics of dispersion of mercury and selenium from freshwater sediments as influenced by chlorides, organics, and eutrophication * with U.T.Hammer(Saskatchewan) 3yr - 1st Inst.	Group	65,000

Environmental Toxicology / Toxicologie de l'environnement - 1983-84
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Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Huebner, E. Zoology Manitoba	Mode of action of third generation insecticides on reproduction and development: Prediction of developmental defects 2yr - 2nd Inst.	Individual	17,490
Hutchinson, T.C. Botany Toronto	Leaf area meter	Equipment	8,525
Hutchinson, T.C. Botany Toronto	Nature and comparison of the buffering capacity of leaf surfaces to acid rain droplets * with R.L.Jefferies(Toronto) 3yr - 2nd Inst.	Group	51,940
Johansen, P.H. Biology Queen's	The effects of pentachlorophenol on predator-prey behaviour using young largemouth bass (Micropterus salmoides) and the guppy (Poecilia reticulata) as a model system * with P.W.Colgan(Queen's) 2yr - 2nd Inst.	Group	39,750
Kalsner, S. Pharmacology Ottawa	High blood pressure, kidney and coronary heart disease and cadmium ingestion in Canada: A study of receptors and effectors	Individual	35,000
Katz, M. Chemistry York	Chemical and mutagenic activity of adsorbed polycyclic aromatic hydrocarbons and oxidation products * with E.Lee-Ruff(York) 2yr - 2nd Inst.	Group	53,000
Keates, R.A.B. Chemistry & Biochem Guelph	Heavy metal toxicity and the cytoskeleton 2yr - 2nd Inst.	Individual	29,484
Law, F.C.P. Biolog. Sciences Simon Fraser	Metabolic disposition and sub-lethal effects of chlorodiphenyl ethers in fish and rats * with M.M.Hansell(Dalhousie), M.Addison(Bedford Inst.) 3yr - 3rd Inst.	Group	53,472
Lui, E.M.K. Pharmacology Western Ontario	Hepatic enzyme tests for screening potential chemical effects on male reproduction 3yr - 2nd Inst.	Individual	55,448
Mackie, G.L. Zoology Guelph	Partitioning and bioaccumulation of heavy metals by functional groups of zoobenthos in acidifying lakes 3yr - 2nd Inst.	Individual	41,919

Environmental Toxicology / Toxicologie de l'environnement - 1983-84
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Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Massé, R. INRS-Santé Québec - INRS	Etudes de modèles bactériens du métabolisme animal appliquées à la biodégradation des BPC et des amines d'aryle et de leur biotransformation dans l'environnement * avec M.Sylvestre(Québec-I.A.F.) 3ans - 2e vers.	Groupe	53,000
Matheson, A.T. Biochem./Microbiol. Victoria	Toxicology in marine and aquatic systems * with M.Ashwood-Smith, G.R.Branton,J.T.Buckley, E.E.Ishiguro,W.W.Kay,A.McAuley, J.A.McCarter,R.H.Mitchell, R.W.Olafson,T.W.Pearson, T.J.Trust,P.R.West(Victoria) 3yr - 3rd Inst.	Group	150,000
McCalla, D.R. Biochemistry McMaster	Environmental toxicology of nitro polycyclic aromatic hydrocarbons * with M.A.Quilliam, B.E.McCarry(McMaster) 3yr - 3rd Inst.	Group	88,323
McKinnon, D.M. Chemistry Manitoba	Investigation of the reactions of polychlorinated biphenyls with sulphur 3yr - 2nd Inst.	Individual	24,253
Mellors, A. Chemistry Guelph	Physical toxicity and the effects of halogenated hydrocarbons on mammalian cells 3yr - 3rd Inst.	Individual	38,046
Merali, Z. Psychology Ottawa	Cadmium, lead and stress: Toxicological effects of multi-exposure on behavioural and certain biological systems following chronic low level treatment * with R.L.Singhal(Ottawa) 3yr - 2nd Inst.	Group	44,981
Nicholls, D.M. Biology York	Effect of heavy metals on the translation of genetic information in mammalian tissues 3yr - 3rd Inst.	Individual	29,081
Nieboer, E. Biochemistry McMaster	Nickel toxicology 3yr - 1st Inst.	Individual	70,000
Nieboer, E. Biochemistry McMaster	Spectrophotometer for use in nickel toxicology	Equipment	15,000
Ormrod, D.P. Horticultural Sci. Guelph	Chronic low-level phytotoxicity from mixtures of gaseous pollutants * with O.B.Allen(Guelph), D.Balsillie(Ont. Min. of the Envir.) 3yr - 1st Inst.	Group	62,000

Environmental Toxicology / Toxicologie de l'environnement - 1983-84
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Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Parkinson, D. Biology Calgary	Soil processes as early indicators of terrestrial ecosystem stress 3yr - 3rd Inst.	Individual	53,234
Petit, T.L. Psychology Toronto	Neurobiological mechanisms of lead toxicity 3yr - 1st Inst.	Individual	35,000
Petit, T.L. Psychology Toronto	Image analysis system	Equipment	16,970
Plaa, G.L. Pharmacology Montréal	Evaluation of toxic interactions involving multiple target organs * with J.Brodeur, A.L.Gascon, J.Lambert(Montréal) 3yr - 1st Inst.	Group	60,000
Plaa, G.L. Pharmacologie Montréal	Potentiation of haloalkane hepatotoxicity by ketones * avec G.Caillé, M.G.Côté, P.Du Souich(Montréal) 3ans - 3e vers.	Groupe	71,296
Poirier, G.G. Biologie Sherbrooke	Caractérisation du mode d'action des cancérigènes pancréatiques: Réparation de l'ADN et activité poly (ADP-ribose) polymérase * avec M.Paterson(Atomic Energy of Canada, Chalk River, Ont.) 2ans - 2e vers.	Groupe	48,760
Quigley, R.M. Civil Engineering Western Ontario	Toxic leachate migration through clay: A field research study * with R.K.Rowe, J.L.Sullivan, A.Margaritis(Western Ontario) 3yr - 2nd Inst.	Group	40,492
Rabenstein, D.L. Chemistry Alberta	The chemistry of heavy metal toxicology 3yr - 2nd Inst.	Individual	37,630
Rahimtula, A. Biochemistry Memorial	Toxic and metabolic effects of crude and treated oils on birds, particularly seabirds * with W.Threlfall, P.O'Brien(Memorial), J.Payne(Fisheries and Oceans) 3yr - 3rd Inst.	Group	59,413
Reid, D.M. Biology Calgary	Ethylene as an air pollutant: effects on productivity of some agricultural crops * with R.P.Pharis(Calgary) 3yr - 1st Inst.	Group	50,000
Robinson, G.G.C. Botany Manitoba	An investigation of the influence of chronic exposure of phytoplankton to copper and zinc 3yr - 1st Inst.	Individual	16,035
Robinson, G.G.C. Botany Manitoba	An investigation of the ecological effects of triazine herbicides on littoral algal communities in fresh water 2yr - 1st Inst.	Individual	19,085

Environmental Toxicology / Toxicologie de l'environnement - 1983-84
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Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Rosin, M.P. Pathology British Columbia	Genotoxic effect of concurrent exposures of mammalian cells to particulates (asbestos and coal dust) and carcinogenic N-nitroso compounds 2yr - 2nd Inst.	Individual	42,400
Safe, S.H. Chemistry Guelph	Chlorinated pesticides: Biologic and neonatal effects 3yr - 2nd Inst.	Individual	39,644
Sarkar, B. Biochemistry Toronto	Nickel transport, accumulation, toxicity and excretion 2yr - 1st Inst.	Individual	49,849
Schiefer, H.B. Veter. Pathol. Saskatchewan	Trichothecene mycotoxicosis: pathological, immunological, interactive and cellular studies * with B.R.Blakley, G.G.Khachatourians(Saskatchewan) 3yr - 1st Inst.	Group	140,000
Smith, R.J.F. Biology Saskatchewan	Assay systems based on behavioural responses of fish to natural stimuli 3yr - 2nd Inst.	Individual	44,388
Snieckus, V.A. Chemistry Waterloo	Toxic products of polycyclic aromatic hydrocarbons in the soil: Fungal metabolism and synthesis * with H.L.Holland(Brock) 2yr - 2nd Inst.	Group	26,913
Solomon, K.R. Environ. Biology Guelph	Method for evaluating the effects of pesticides in the aquatic ecosystem * with L.V.Edgington, F.L.McEwen, N.K.Kaushik, J.B.Robinson, G.R.Stephenson(Guelph) 3yr - 3rd Inst.	Group	154,474
Stillman, M.J. Chemistry Western Ontario	Interactions of cadmium and mercury with specific metal binding proteins; application of therapeutic agents in environmental toxicology * with M.G.Churian, P.A.W.Dean(Western Ontario) 3yr - 1st Inst.	Group	70,000
Stokes, P.M. Botany Toronto	Benthic plant communities in acid lakes, fluxes of aluminum and benthic faunal interactions * with J.C.Van Loon, N.C.Collins(Toronto) 3yr - 3rd Inst.	Group	40,401
Von Borstel, R.C. Genetics Alberta	Molecular basis of mutagen action 3yr - 1st Inst.	Individual	90,000
Weinberger, P. Biology Ottawa	Effect of rhizosphere pH on release of bound herbicides and pesticides 2yr - 2nd Inst.	Individual	16,006

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Wiebe, J.P. Zoology Western Ontario	Effects of lead on testicular endocrinology in the developing male 2yr - 2nd Inst.	Individual	40,704
Wood, C.M. Biology McMaster	Physiological studies on the toxicity of environmental acid to freshwater fish, amphibians and crustaceans * with D.G.McDonald(McMaster) 3yr - 3rd Inst.	Group	59,413

Oceans / Océans - 1983-84

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Andersen, R.J. Oceanography British Columbia	Chemical and physiological studies of toxin and siderophore production by marine phytoplankton * with P.J.Harrison, F.J.R.Taylor(B.C.) 3yr - 3rd Inst.	Group	83,297
Austin, G.L. Physics McGill	Design, development and test of an improved ice surveillance radar system for marine use 3yr - 3rd Inst.	Individual	50,263
Beaumont, C. Oceanography Dalhousie	The development and thermal histories of continental margin sedimentary basins * with C.Keen(Atlantic Geoscience Centre) 3yr - 1st Inst.	Group	71,580
Boyd, R. Geology Dalhousie	Models for coastal and continental shelf sedimentation from Sable Island Bank * with C.L.Amos(Atlantic Geoscience Centre), A.Ruffman(Geomarine Associates Ltd.) 2yr - 1st Inst.	Group	48,700
Calvert, S.E. Oceanography British Columbia	Geochemistry of oceanic ferromanganese nodules * with D.J.Huntley(Simon Fraser) 3yr - 3rd Inst.	Group	43,338
Cardinal, A. Biologie Laval	Taxonomie et écophysiologie des diatomées marines benthiques de substrat dur 3ans - 2e vers.	Individuelle	31,164
Clowes, R.M. Geophys./Astron. British Columbia	Studies of oceanic sediments and upper crust using telemetered sonobuoys and ocean bottom seismometers 3yr - 3rd Inst.	Individual	28,162
Daborn, G.R. Biology Acadia	Productivity of the pelagic zone of the southern bight of Minas Basin 2yr - 1st Inst.	Individual	43,200
Dickson, J.I. Génie métall. Ecole Polytechnique	Appareillage pour l'automatisation d'une machine servohydraulique pour essais mécaniques	Appareillage	44,524
Dickson, J.I. Génie métall. Ecole Polytechnique	Comportement de fissures courtes lors de la fatigue-corrosion des aciers dans l'eau salée * avec J.B.Bailon(Ecole Polytechnique) 3ans - 1er vers.	Groupe	84,550
Emery, W.J. Oceanography British Columbia	Satellite remote sensing of ocean circulation inferred from ice movements and sea surface temperature patterns * with P.H.LeBlond, L.A.Mysak(B.C.) 3yr - 3rd Inst.	Group	66,543

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Findlay, J.A. Chemistry New Brunswick	A study in marine natural products * with E.W.K.Jay, C.S.Lobban, A.R.A.Taylor, M.L.H.Thomas, Z.Valenta, N.J.Whitney, K.Wiesner(N.B.) 3yr - 3rd Inst.	Group	95,061
Fletcher, G.L. Mar. Sc. Res. Lab Memorial	Improved freezing tolerance of Atlantic salmon by gene transfer * with P.L.Davies(Queen's), C.L.Hew(Toronto) 3yr - 2nd Inst.	Group	50,880
Haedrich, R.L. Biology Memorial	Biological recolonization rate in iceberg scours 3yr - 1st Inst.	Individual	28,128
Haedrich, R.L. Biology Memorial	Deep-sea camera system	Equipment	41,423
Hall, J.M. Geology Dalhousie	Investigation of the hydrothermal systems responsible for the formation of massive sulfide ore bodies in the ocean crust * with P.T.Robinson(Dalhousie) 3yr - 3rd Inst.	Group	53,472
Harrison, P.J. Oceanogr./Botany British Columbia	Biological productivity in frontal areas in B.C. coastal waters * with T.R.Parsons(B.C.) 3yr - 3rd Inst.	Group	36,599
Haykin, S. Elec. & Comp. Eng. McMaster	Ice surveillance in the Arctic using surface-based radar 3yr - 2nd Inst.	Individual	77,274
Hobson, L.A. Biology Victoria	The relationship between phytoplankton biology and turbulent mixing in the marine environment * with K.Denman(Inst. of Ocean Sciences) 3yr - 2nd Inst.	Group	19,059
Huntley, D.A. Oceanography Dalhousie	The movement of water and sediment near the sea bed * with A.J.Bowen(Dalhousie) 2yr - 1st Inst.	Group	58,006
Ingram, R.G. Oceanography McGill	Self recording tide gauge	Equipment	8,733
Ingram, R.G. Inst. Oceanography McGill	Entrainment, mixing processes and phytoplankton production in an under-ice Hudson Bay plume * with L.Legendre(Laval), V.H.Chu(McGill) 3yr - 3rd Inst.	Group	40,996
Isaacson, M.S.Q. Civil Engineering British Columbia	Design of offshore structures in shallow water 3yr - 3rd Inst.	Individual	41,589

Oceans / Océans - 1983-84 (continued / suite)

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Kamphuis, J.W. Civil Engineering Queen's	Research on the hydraulic modelling of artificial sand islands * with A.Brebner(Queen's) 3yr - 1st Inst.	Group	48,500
Khan, R.A. Biology Memorial	The effects of crude oil on parasitized cod and winter flounder 3yr - 3rd Inst.	Individual	27,330
Knoechel, R. Biology Memorial	Plankton rate processes in oligotrophic and coastal oceans 3yr - 2nd Inst.	Individual	25,444
Lane, P.A. Biology Dalhousie	Experimental validation of cause and effect relationships in polluted marine ecosystems 3yr - 3rd Inst.	Individual	38,380
LeBlond, P.H. Oceanography British Columbia	Physical oceanography of Arctic Straits 3yr - 3rd Inst.	Individual	40,996
Leggett, W.C. Biology McGill	Predicting year class strength in capelin 3yr - 3rd Inst.	Individual	31,769
Louden, K.E. Oceanography Dalhousie	Heat flow study of eastern Canadian margins * with J.A.Wright(Memorial) 3yr - 2nd Inst.	Group	55,788
Mackie, G.O. Biology Victoria	Impact of 'jellyfish' predation upon fish larvae populations 3yr - 2nd Inst.	Individual	25,440
Michel, B. Génie civil Laval	Impact de la glace sur les ouvrages de génie civil de l'Arctique, à parois inclinées 3ans - 1er vers.	Individuelle	50,900
Michel, B. Génie civil Laval	Système frigorifique pour une chambre froide expérimentale	Appareillage	23,167
Miller, J.R. Physics York	Investigation of water color interpretation algorithms for Case 2 waters 2yr - 1st Inst.	Individual	49,600
Morgenstern, N.R. Civil Engineering Alberta	Ice rubble mechanics * with D.C.Sego(Alberta) 3yr - 1st Inst.	Group	97,040
Morrison, J.B. Kinesiology Simon Fraser	Definition of physiological loading imposed by underwater breathing apparatus 3yr - 2nd Inst.	Individual	38,303
Muehlenbachs, K. Geology Alberta	An integrated study of precious and base metal mobilization in hydrothermally altered oceanic crust * with B.E.Nesbitt(Alberta) 3yr - 1st Inst.	Group	71,944

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Pond, G.S. Oceanography British Columbia	Horizontal structure and dynamics of low frequency velocity and density variations in the Strait of Georgia * with P.H.Lebland(British Columbia) 3yr - 1st Inst.	Group	49,210
Ryall, P.J.C. Geology Dalhousie	Investigations of mid-ocean ridges and polymetallic sulphide deposits using an electric rock core drill * with J.M.Hall, M.Zentilli(Dalhousie), J.M.Franklin(Energy, Mines & Res.) 2yr - 1st Inst.	Group	95,200
Scheibling, R.E. Biology Dalhousie	Sea urchin disease: ecologic and economic implications * with K.H.Mann(Dalhousie) 3yr - 1st Inst.	Group	73,190
Scott, S.D. Geology Toronto	Young seamounts of the northeast Pacific Ocean * with R.L.Chase(British Columbia), T.J.Barrett(Toronto) 3yr - 1st Inst.	Group	132,850
Shields, D.H. Civil Engineering Manitoba	Determining properties of submarine permafrost for oil and gas exploration and development * with L.Domaschuk, C.S.Man(Manitoba) 3yr - 2nd Inst.	Group	70,596
South, G.R. Biology Memorial	Experimental assessment of urchin-algae-lobster interaction in relation to fishery development * with D.H.Steele(Memorial) 3yr - 3rd Inst.	Group	59,413
Sprague, J.B. Zoology Guelph	Flux of cadmium through an arctic marine ecosystem 3yr - 2nd Inst.	Individual	27,761
Sykes, J.F. Civil Engineering Waterloo	Sea ice dynamics * with W.C.Lennox,T.E.Unny, D.E.Grierson(Waterloo) 3yr - 1st Inst.	Group	92,842
Tunncliffe, V.J. Biology Victoria	Environmental controls on deep water community development 2yr - 2nd Inst.	Individual	18,232
Walsh, J. Eng./Applied Sci. Memorial	Research on high frequency radars for detection of sea ice * with K.A.Butt(C-CORE), W.Winsor(C-CORE), B.P.Sinha(Memorial) 3yr - 2nd Inst.	Group	89,942
Wangersky, P.J. Oceanography Dalhousie	The sources, nature, and size distribution of particles in the ocean 3yr - 1st Inst.	Individual	91,580

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Wangersky, P.J. Oceanography Dalhousie	Portable digital CSTD with O2 and pH probes; Components for in situ scatter meter	Equipment	47,466
Wells, D.E. Surveying Eng New Brunswick	Marine geodesy * with P.Vanicek(N.B.) 3yr - 3rd Inst.	Group	92,684
Williams, H. Earth Sciences Memorial	Geophysical compilation maps of the Atlantic margin of North America 3yr - 3rd Inst.	Individual	48,719

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Bandler, J.W. Elec. & Comp. Eng. McMaster	Optimal tuning of microwave filters and multiplexing networks 3yr - 1st Inst.	Individual	55,950
Bhargava, V.K. Electrical Eng. Concordia	Adaptive forward error correction techniques for digital communications by satellite * with J.Conan(Ecole Polytechnique), G.E.Seguin(Royal Military College) 3yr - 2nd Inst.	Group	51,940
Bochmann, G.V. Infor. & rech opér. Montréal	Banques de données vidéotex: Coopérations et applications bureautiques * avec J.Gecsei, F.Lustman(Montréal) 3ans - 2e vers.	Groupe	102,357
Booth, K.S. Computer Science Waterloo	2-D and 3-D interactive computer graphics modeling systems * with J.C.Beatty, R.H.Bartels(Waterloo) 3yr - 3rd Inst.	Group	73,406
Boutin, N. Génie électrique Sherbrooke	Nouvelle technique de modulation numérique pour la radio-mobile retransmise par satellite * avec S.Morissette(Sherbrooke) 3ans - 2e vers.	Groupe	25,720
Buhr, R J A. Sys Eng/Comp Sci. Carleton	Computer-aided design of computer systems to implement communications protocols * with C.M.Woodside(Carleton) 3yr - 1st Inst.	Group	64,850
Bures, J. Génie-physique Ecole Polytechnique	Coupleurs variables à fibres optiques monomodes fusionnées * avec J.Lapierre(Ecole Polytechnique) 3ans - 1er vers.	Groupe	65,000
Carter, C.R. Elec. & Comp. Eng. McMaster	Signal processing of real SARSAT signals 3yr - 1st Inst.	Individual	43,000
Delfour, M.C. Mathématiques appl. Montréal	Diffuseurs thermiques de poids minimum pour les composants état solide de haute puissance des satellites de communication * avec M.J.Payre(Sherbrooke) 3ans - 3e vers.	Groupe	24,888
Delisle, C. Physique Laval	Systèmes bistables pour les communications optiques * avec R.Tremblay(Laval) 3ans - 1er vers.	Groupe	39,500
Dillon, R.F. Psychology Carleton	A human factors investigation of function keys and voice recognition * with J.W.Tombaugh(Carleton) 3yr - 1st Inst.	Group	41,060
Dubois, E. INRS-Télécomm. Québec - INRS	High-definition television * with B.Prasada(INRS-Quebec) 3yr - 3rd Inst.	Group	55,730

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Elmasry, M.I. Electrical Eng. Waterloo	Structured hierarchical design and simulation of VLSI systems * with P.Dasiewicz,J.V.Hanson, F.Mavaddat,K.Singhal,R.E.Seviora, T.R.Viswanathan,U.Vlach(Waterloo) 3yr - 1st Inst.	Group	484,000
Garside, B.K. Eng. Physics McMaster	Laser sources for optical communications * with P.E.Jessop(McMaster) 3yr - 2nd Inst.	Group	73,458
Georganas, N. Electrical Eng. Ottawa	Packetized digital voice communication in a local computer network 3yr - 3rd Inst.	Individual	27,140
Gilmore, P.C. Computer Science British Columbia	Distributed messaging equipment	Equipment	118,355
Gilmore, P.C. Computer Science British Columbia	A distributed computer-based message system * with A.G.Fowler, J.E.L.Peck(U.B.C.) 2yr - 2nd Inst.	Group	111,300
Hayes, J.F. Electrical Eng. McGill	An optical fiber based local area network	Equipment	19,828
Hayes, J.F. Electrical Eng. McGill	An optical fiber based on local area network 3yr - 1st Inst.	Group	49,100
Hoefer, W.J.R. Electrical Eng. Ottawa	Integrated circuits and components for millimeter-wave communications 3yr - 2nd Inst.	Individual	53,000
Holt, R.C. Computer Science Toronto	Software development system for embedded microprocessors 3yr - 1st Inst.	Individual	96,642
Holt, R.C. Computer Science Toronto	Computer work stations and prototype embedded systems	Equipment	114,302
Hruska, C.K. Mathematics York	Piezoelectricity research laboratory: nonlinear properties and stability of piezoelectric resonators for frequency control and selection 3yr - 1st Inst.	Individual	39,300
MacLeod, I.A. Comp. & Info. Sc. Queen's	Adaptive software interface for computer communication networks * with D.T.Barnard, D.A.Jardine(Queen's) 3yr - 2nd Inst.	Group	68,900
Magnenat-Thalmann, N. Méth. quant. gest. Montréal	Un système graphique complet (2D et 3D) pour le fournisseur d'information de Telidon * avec D.Thalmann(Montréal) 2ans - 2e vers.	Groupe	33,390

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Malcolm, M.A. Computer Science Waterloo	Portable software for networks of personal computer work stations * with J.C.Beatty, K.S.Booth(Waterloo) 3yr - 3rd Inst.	Group	83,178
Mandelis, A. Mechanical Eng. Toronto	Photoacoustic application to silicon process R & D for ion implant parameter control enhancement	Individual	31,515
Mark, J.W. Electrical Eng. Waterloo	Integrated services using local area communication networks * with J.W.Wong, J.A.Field, G.B.Agnev(Waterloo) 3yr - 2nd Inst.	Group	135,426
Mason, L.G. INRS-Télécomm. Québec - INRS	Switching techniques for integrated telecommunications networks * with M.A.Kaplan(I.N.R.S.-Québec), M.J.Ferguson(Bell-Northern Research-I.N.R.S.-Telecommunications) 3yr - 2nd Inst.	Group	69,097
Modi, V.J. Mechanical Eng. British Columbia	Dynamics and control of large communications satellites 3yr - 3rd Inst.	Individual	23,765
Mullin, R.C. Combin./Optimiz. Waterloo	Data encryption and security * with I.F.Blake, S.A.Vanstone(Waterloo) 2yr - 1st Inst.	Group	40,000
Mylopoulos, J. Computer Science Toronto	Design, implementation and testing of a semantic data model: The Taxis Project 3yr - 1st Inst.	Individual	103,600
Ostlund, N.S. Computer Science Waterloo	The systolic loop: A multiple processor architecture enabling efficient interprocessor communication 2yr - 1st Inst.	Individual	57,976
Peppard, L.E. Electrical Eng. Queen's	Computer aided design and testing of VLSI circuits for communications * with J.L.Mason, P.J.McLane, S.R.Penstone, S.E.Tavares, P.H.Wittke(Queen's) 3yr - 2nd Inst.	Group	74,624
Probert, R.L. Computer Science Ottawa	A communications protocol testing system & related software productivity aids * with T.Y.Cheung, L.Logrippo, S.I.Omar, J.Raymond(Ottawa) 3yr - 1st Inst.	Group	63,500
Rimrott, F.P.J. Mechanical Eng. Toronto	Mechanical analysis of communications satellite systems and subsystems 3yr - 1st Inst.	Individual	39,480

Communications and Computers / Télécommunications et informatique - 1983-84
(continued / suite)

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Rumin, N. Electrical Eng. McGill	Design and testing of VLSI circuits * with V.K.Agarwal, D.Avis, J.F.Hayes(McGill) 3yr - 1st Inst.	Group	78,960
Salama, C.A.T. Electrical Eng. Toronto	VLSI design for signal processing applications 3yr - 2nd Inst.	Individual	64,660
Shafai, L. Electrical Eng. Manitoba	Antenna development for Canadian satellite applications * with E.Bridges, A.Ittipiboon(Manitoba) 3yr - 1st Inst.	Group	87,500
Sorenson, P.G. Computer Science Saskatchewan	Computer - aided information system development workstations	Equipment	42,940
Sorenson, P.G. Computer Science Saskatchewan	Computer-aided information systems analysis and design * with J.P.Tremblay(Saskatchewan) 3yr - 1st Inst.	Group	46,600
Tavares, S.E. Electrical Eng. Queen's	Fundamentals of security and protocols for computer-communication networks * with P.J.McLane, S.G.Akl, G.H.MacEwen, L.L.Campbell, P.D.Taylor(Queen's) 3yr - 3rd Inst.	Group	77,237
Tompa, F.W. Computer Science Waterloo	Data structuring for page-oriented database systems * with G.H.Gonnet, G.P.A.Larson, J.I.Munro(Waterloo) 3yr - 1st Inst.	Group	58,540
Tsichritzis, D. Computer Science Toronto	Message management systems * with F.H.Lochofsky, A.D.Mendelzon(Toronto) 3yr - 3rd Inst.	Group	86,743
Unger, B.W. Computer Science Calgary	An environment for the development of distributed software * with others 3yr - 2nd Inst.	Group	155,145
Venetsanopoulos, A. Electrical Eng. Toronto	Multiple access in satellite networks * with M.Molle, K.C.Sevcik(Toronto) 3yr - 3rd Inst.	Group	35,933
Woodside, C.M. Sys. & Comp. Eng. Carleton	Modelling and optimization of hardware/software tradeoffs for communications protocols 3yr - 2nd Inst.	Individual	26,818

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Amiot, J. Sc. nutr./aliment. Laval	Aliments protéiques végétaux fermentés de haute valeur nutritive * avec G.J.Brisson(Laval), S.Gauthier(Agriculture Canada) 3ans - 1er vers.	Groupe	77,560
Anderson, J.B. Botany Toronto	Strain improvement and control of mycovirus in the cultivated mushroom * with P.A.Horgen(Toronto) 3yr - 3rd Inst.	Group	49,907
Annason, J.T. Biology Ottawa	Endogenous and exogenous antifeedants for pest control in corn * with C.E.Morris, B.J.R.Philogène, C.Nozzolillo, P.Morand(Ottawa), D.R.Gardner, J.D.H.Lambert(Carleton) 3yr - 1st Inst.	Group	80,000
Bayley, H.S. Nutrition Guelph	Measurement of tryptophan requirements for growing finishing pigs * with T.K.Smith(Guelph) 3yr - 2nd Inst.	Group	47,700
Benn, M.H. Chemistry Calgary	Ovipositional semiochemicals in the management of insect pests 2yr - 2nd Inst.	Individual	23,320
Berthiaume, L. Ctre. Rech.-Virolog. Québec - IAF	Influence des conditions physiologiques et environnementales sur la mortalité causée par le virus IPN chez la truite mouchetée en pisciculture * avec D.Larivière(Qué.-Chicoutimi), G.Marsolais(Inst. Armand- Frappier), J.Robin(Sherbrooke) 3ans - 2e vers.	Groupe	38,160
Betteridge, K.J. Médecine vét. Montréal	Etude de l'établissement de la gestation et des facteurs conduisant à la mortalité embryonnaire chez les bovins * avec P.Guay, A.V.Tremblay, A.K.Goff, N.Larivière(Montréal) 3ans - 3e vers.	Groupe	118,826
Bewley, J.D. Biology Calgary	Predicting drought-stress tolerance 3yr - 3rd Inst.	Individual	52,283
Borden, J.H. Biolog. Sciences Simon Fraser	Semiochemicals for agricultural insect pests * with A.C.Oehlschlager, K.N.Slessor(Simon Fraser) 3yr - 2nd Inst.	Group	115,540
Boulet, M. Ctre rech. nutrition Laval	Heat stability of evaporated milk 3ans - 2e vers.	Individuelle	47,700

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Brisson, G.J. Zootechnie Laval	Importance de l'acide folique chez la truie gestante * avec F.Minvielle(Laval),J.DuFour, J.U.Matte(Station de Recherches Lennoxville), G.A.Arsenault(Service Vétérinaires Québec) 3ans - 1er vers.	Groupe	108,000
Buckland, R.B. Animal Science Macdonald Coll.	Seminal plasma proteins and fertility of frozen semen * with C.G.Zarkadas(Macdonald) 3yr - 1st Inst.	Group	30,000
Bushuk, W. Plant Science Manitoba	Computer assisted wheat grading * with E.Shwedyk, R.M.Rangayyan(Manitoba) 3yr - 2nd Inst.	Group	53,000
Carruthers, T.D. Vet. Phys. Sci. Saskatchewan	Antral follicles and variability of superovulatory response to follicle stimulating hormone in cattle 3yr - 2nd Inst.	Individual	32,860
Chiba, M. Chemistry Brock	Factors affecting benomyl degradation 3yr - 3rd Inst.	Individual	20,200
Christensen, D.A. Animal/Poultry Sc. Saskatchewan	Atomic absorption spectrophotometer	Equipment	34,282
Christensen, D.A. Animal/Poultry Sc. Saskatchewan	Copper and selenium metabolism in cattle * with M.E.Smart, B.Laarveld(Saskatchewan) 3yr - 1st Inst.	Group	68,000
Cullen, W.R. Chemistry British Columbia	Synthesis of commercially important and highly active insect growth regulators, insecticides, and herbicides * with M.D.Fryzuk,B.R.James, J.P.Kutney(U.B.C.) 3yr - 1st Inst.	Group	80,000
DeMan, J.M. Food Science Guelph	Canola oil processing * with R.G.Ackman(T.U.N.S.) 3yr - 2nd Inst.	Group	69,960
Descôteaux, J.P. Ctre. Rech.-Virol. Québec - IAF	L'étude des entérites causées par le coronavirus cunicole chez le lapin * avec L.Berthiaume, G.Lussier(I.A.F.) 2ans - 2e vers.	Groupe	11,660
Downie, H.G. Bio-Med Eng. Guelph	Pathophysiological model for stress characterization in swine * with P.A.Gentry,P.K.Basrur, R.M.Liptrap(Guelph) 2yr - 2nd Inst.	Group	42,400
Fowler, D.B. Crop Dev. Ctre. Saskatchewan	Transfer of cold tolerance to winter wheat from related species 3yr - 2nd Inst.	Individual	45,580

Food/Agriculture / Alimentation/Agriculture - 1983-84
(continued / suite)

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Glass, A.D. Botany British Columbia	Potassium utilization in barley 3yr - 1st Inst.	Individual	30,000
Gray, D.M. Agric. Eng. Saskatchewan	The role of snow in agricultural production * with D.H.Male, D.I.Norum(Saskatchewan) 3yr - 1st Inst.	Group	80,000
Gusta, L.V. Crop Science Saskatchewan	Mechanisms by which ABA increases plant cold hardiness 3yr - 1st Inst.	Individual	42,900
Haard, N.F. Biochemistry Memorial	Proteolytic enzymes in cheddar cheese * with A.M.Martin, T.R.Patel(Memorial) 3yr - 2nd Inst.	Group	74,200
Harney, P.M. Horticultural Sci. Guelph	Herbicide tolerance in Brassica crops * with V.Souza Machado(Guelph) 3yr - 1st Inst.	Group	35,000
Huner, N.P.A. Plant Science Western Ontario	Control of snow mold growth * with R.B.Van Huystee(Western Ontario), E.W.B.Ward(Agriculture Canada) 3yr - 3rd Inst.	Group	35,648
Hunt, L.A. Crop Science Guelph	Evaluation of traits associated with photosynthetic productivity in wheat 3yr - 3rd Inst.	Individual	38,024
Hunter, R.B. Crop Science Guelph	Prevention of mycotoxin production in corn * with L.V.Busch(Guelph) 3yr - 3rd Inst.	Group	23,765
Jana, S. Crop Science Saskatchewan	Conservation of genetic resources: barley and durum wheat 3yr - 3rd Inst.	Individual	47,530
Jelen, P. Food Science Alberta	Physico-chemical and engineering studies of ultrafiltration and reverse osmosis for food processing (3rd instalment deferred to 1983-84) 3yr - 3rd Inst.	Individual	47,530
Jenkins, D.J.A. Nutrition/Food Sci Toronto	Human nutritional studies to promote the use of leguminous seeds * with L.U.Thompson, A.V.Rao, G.H.Anderson, L.M.Blendis(Toronto) 3yr - 3rd Inst.	Group	118,826
Kannenbergh, L.W. Crop Science Guelph	Gene pool development in corn with emphasis on maturity, yield, stalk quality, and corn borer resistance 3yr - 2nd Inst.	Individual	47,700

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Karamanos, R.E. Soil Science Saskatchewan	Micronutrients in Saskatchewan soils * with J.W.B.Stewart, J.J.Germida(Saskatchewan) 2yr - 1st Inst.	Group	66,300
Kay, B.D. Land Resource Sc Guelph	Management of soil physical conditions under intensive corn cultivation * with others 3yr - 2nd Inst.	Group	116,600
King, G.J. Animal/Poultry Sc. Guelph	Factors affecting estrous behaviour in dairy cows * with J.S.Walton(Guelph), J.McDougall(W.O.Breeders Inc.) 3yr - 3rd Inst.	Group	35,648
Knott, D.R. Crop Science Saskatchewan	The exploitation in wheat of rust resistance derived from related species 3yr - 2nd Inst.	Individual	30,740
Krishnamurti, C.R. Animal Science British Columbia	Nutrition - reproduction interactions * with J.A.Shelford(B.C.) 3yr - 2nd Inst.	Group	58,300
Larivière, S. Pathol./microbiol. Montréal	Système de microradiographie et de fluorescence	Appareillage	46,217
Larivière, S. Pathol./microbiol. Montréal	Etude physiopathogénique de la rhinite atrophique du porc * avec A.Bisaillon,G.Cousineau, R.Higgins,A.Lagacé,G.P.Martineau, K.R.Mittal(Montréal) 3ans - 1er vers.	Groupe	58,500
Larter, E.N. Plant Science Manitoba	Evaluation and utilization of corn genotypes for seedling cold tolerance 3yr - 2nd Inst.	Individual	31,800
MacKenzie, A.F. Ren. Resources Macdonald Coll.	Effects of foliar and soil fertilizer N and inter-row clover on yield and quality of corn and on subsequent soil quality * with G.Mehuys, R.Phillip(Macdonald) 3yr - 1st Inst.	Group	58,000
March, B.E. Poultry Science British Columbia	Stress and efficiency of protein utilization in the growing chicken 3yr - 3rd Inst.	Individual	53,472
Marquardt, R.R. Animal Science Manitoba	Livestock mycotoxicosis from stored cereal grains * with D.Abramson(Ag. Can.Res.Station), W.E.Muir,S.C.Stothers, G.D.Phillips(Manitoba) 3yr - 1st Inst.	Group	80,000

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McCully, M.E. Biology Carleton	Developmental studies of plant and microbial interactions involved in the establishment of soil sheaths and of associative nitrogen fixing relationships in the rhizosphere of corn 3yr - 1st Inst.	Individual	47,000
McHughen, A.G. Crop Dev. Ctre. Saskatchewan	Development of salt-tolerant flax strains through somaclonal variation in vitro 3yr - 1st Inst.	Individual	39,000
McKersie, B.D. Crop Science Guelph	Physiological and genetic basis of winter hardiness in Triticale and wheat * with L.A.Hunt, E.Reinbergs(Guelph) 3yr - 3rd Inst.	Group	35,648
McKyes, E. Agricultural Chem. Macdonald Coll.	Energy conservation in corn production * with A.F.MacKenzie, A.K.Watson, P.R.Warman(Macdonald College) 3yr - 3rd Inst.	Group	47,530
McNeil, J.N. Biologie Laval	Role of pheromones in Pseudaletia unipuncta population dynamics and its importance in management programmes for this and other noctuid pest species 3ans - 3e vers.	Individuelle	55,848
Miller, M.H. Land Resource Sc Guelph	Modifying soil-plant environment to maximize yield potential of maize * with M.Tollenaar, G.W.Thurtell, D.M.Brown(Guelph) 3yr - 2nd Inst.	Group	95,400
Mowat, D.N. Animal/Poultry Sc. Guelph	Nutritional evaluation of residue from methane fermentation of animal wastes * with G.K.Macleod, J.G.Buchanan-Smith(Guelph) 2yr - 2nd Inst.	Group	37,100
Muir, W.E. Agricuilt. Eng. Manitoba	Efficient crop drying with near-ambient temperature air * with R.N.Sinha(Manitoba) 3yr - 2nd Inst.	Group	53,000
Murphy, B.D. Biology Saskatchewan	High speed refrigerated centrifuge	Equipment	26,250
Murphy, B.D. Biology Saskatchewan	Equine chorionic gonadotrophin * with P.F.Flood, F.M.Bristol(Sask.) 3yr - 3rd Inst.	Group	42,184
Nakai, S. Food Science British Columbia	Statistical optimization and data processing of food research 2yr - 2nd Inst.	Individual	26,500
Nakai, S. Food Science British Columbia	Microcomputer for feasibility information on food research	Equipment	15,155

Food/Agriculture / Alimentation/Agriculture - 1983-84
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Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Newkirk, G.F. Biology Dalhousie	Development of oyster hatchery and nursery culture technology * with M.L.Cross,L.E.Haley, R.K.O'Dor(Dalhousie), J.S.Craigie(Atlantic Research Laboratory) 3yr - 2nd Inst.	Group	53,000
Oaks, B.A. Biology McMaster	Interactions of soil micro-organisms and crop plants: Influence on N ₂ , NO ₃ ⁻ and NH ₄ ⁺ assimilation 3yr - 1st Inst.	Individual	60,000
O'Dor, R.K. Biology Dalhousie	Oyster hatchery water quality monitor	Equipment	19,495
Palmer, W.M. Animal Science Manitoba	Insulin receptor prediction of body fat in cattle * with A.D.Graham,G.H.Crow(Manitoba), G.W.Rahnefeld(Agriculture Canada, Brandon) 3yr - 2nd Inst.	Group	31,800
Peter, R.E. Zoology Alberta	Induced spawning of fish by LRH-A 3yr - 3rd Inst.	Individual	39,807
Prescott, J.F. Vet. Micro./Immun. Guelph	Leptospiiral abortion in cattle in Ontario * with R.B.Miller(Guelph) 3yr - 1st Inst.	Group	38,000
Raeside, J.I. Bio-Med Eng. Guelph	Direct enzyme immunoassays in pregnancy diagnosis * with K.E.Leslie,D.Sandals, R.M.Friendship(Guelph) 3yr - 2nd Inst.	Group	21,200
Rennie, D.A. Soil Science Saskatchewan	Interrelated factors determining fertilizer N efficiency 3yr - 1st Inst.	Individual	90,000
Robb, E.J. Botany & Genetics Guelph	Improved breeding of alfalfa for Verticillium resistance 2yr - 1st Inst.	Individual	20,000
Rubin, L.J. Chemical Eng. Toronto	The elimination of trans isomers in hydrogenated oils * with W.F.Graydon,L.L.Diosady(Toronto), B.F.Teasdale(Canaada Packers Inc.) 3yr - 3rd Inst.	Group	53,472
Savoie, L. Ctre rech. nutrition Laval	Méthode d'évaluation de l'impact des traitements technologiques sur la disponibilité des acides aminés des protéines alimentaires 3ans - 1er vers.	Individuelle	45,000
Savoie, L. Ctre rech. nutrition Laval	Lyophilisateur	Appareillage	17,119

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Savoie, P. Génie agricole Laval	Les choix technologiques en récolte et conservation des fourrages 2ans - 1er vers.	Individuelle	25,000
Seabrook, W.D. Biology New Brunswick	Pheromone control of the blueberry leaf tier moth * with Z.Valenta(New Brunswick) 3yr - 1st Inst.	Group	50,000
Shaykewich, C.F. Soil Science Manitoba	Facility for measuring soil erosion due to rainfall	Equipment	29,364
Shelford, J.A. Animal Science British Columbia	Effectiveness and utilization of different sources and types of fibre in dairy cattle rations 3yr - 3rd Inst.	Individual	29,707
Sim, J.S. Poultry Science British Columbia	Continuous separation of lysozyme from egg white * with S.Nakai,K.V.Lo,D.B.Bragg(British Columbia) 3yr - 1st Inst.	Group	65,000
Simpson, G.M. Crop Science Saskatchewan	Selection of drought resistant cereals by hormone analysis 3yr - 3rd Inst.	Individual	59,413
Snieckus, V.A. Chemistry Waterloo	Provision of new fungicides related to Vitavax 3yr - 2nd Inst.	Individual	29,680
Souza Machado, V. Horticultural Sci. Guelph	Inter-relation of seed osmoconditioning and plant protection in onions * with L.V.Edgington, I.L.Nonnecke(Guelph) 3yr - 2nd Inst.	Group	31,800
St-Pierre, S.A. Physiol./pharm. Sherbrooke	Entérotoxines thermostables de coli d'origine animale * avec R.Lallier(Montréal) 3ans - 3e vers.	Groupe	59,413
Summers, J.D. Animal/Poultry Sc. Guelph	Increasing the yield of edible protein through dietary means * with S.Leeson(Guelph)	Group	47,000
Sutton, J.C. Environ. Biology Guelph	Integrated disease management for improved productivity of winter wheat * with R.Hall, B.H.MacNeill,L.A.Hunt, T.J.Gillespie(Guelph) 3yr - 3rd Inst.	Group	71,296
Swatland, H.J. Animal/Poultry Sc. Guelph	Humane slaughter and meat quality of pigs 3yr - 2nd Inst.	Individual	15,900
Thompson, J.E. Biology Waterloo	Assessment of crop resistance to chemical and environmental stress. 3yr - 2nd Inst.	Group	33,920

Food/Agriculture / Alimentation/Agriculture - 1983-84
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Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Thurtell, G. Land Resource Sc Guelph	Portable photosynthesis system	Equipment	15,222
Tung, M.A. Food Science British Columbia	Thermophysical studies for improved food processes 3yr - 2nd Inst.	Individual	40,280
Turkington, R. Botany British Columbia	Managing grass-legume mixtures for improved productivity * with F.B.Holl(British Columbia) 3yr - 1st Inst.	Group	60,000
Verma, D.P.S. Biology McGill	Crop improvement through genetic manipulation of plants for their ability to develop an association with nitrogen fixing microorganisms 3yr - 1st Inst.	Individual	60,000
Walton, P.D. Plant Science Alberta	Interspecific hybridization in forage grasses 3yr - 2nd Inst.	Individual	26,500
Young, L.G. Animal/Poultry Sc. Guelph	Nutrition and management of gilts for reproduction * with G.J.King(Guelph) 3yr - 1st Inst.	Group	50,000

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Arsenault, H.H. Physique Laval	Optical and digital signal processing 3ans - 1er vers.	Individuelle	52,800
Ayer, W.A. Chemistry Alberta	Phytochemical investigation of important forest diseases. Blue stain fungi associated with the Mountain Pine Beetle * with Y.Hiratsuka(Alberta) 3yr - 2nd Inst.	Group	53,000
Baldur, R. Génie mécanique Ecole Polytechnique	Compressed air transducers and actuators for robotics * avec A.Bazergui(Ecole Polytechnique) 3ans - 1er vers.	Groupe	50,000
Bolker, H.I. Chemistry McGill	By-products from sulphite pulping * with N.G.Lewis(Chemistry-Paprican), G.Just(McGill) 3yr - 1st Inst.	Group	40,000
Borden, J.H. Biolog. Sciences Simon Fraser	Semiochemicals for forest insect pests * with A.C.Oehlschlager, K.N.Slessor(Simon Fraser) 3yr - 2nd Inst.	Group	139,384
Bouchard, C. Sci l'activité phys Laval	Les causes des variations dans l'adaptabilité des propriétés de la machine humaine sous l'influence de l'entraînement physique * avec F.Landry, P.P.Lagassé, M.R.Boulay, A.Tremblay, G.Thériault(Laval) 3ans - 3e vers.	Groupe	129,193
Brussell, E.M. Psychology Concordia	Computer graphics systems for research concerning the perceptual fidelity of aircraft simulators	Equipment	94,700
Brussell, E.M. Psychology Concordia	The influence of perceptual cue interactions on the fidelity of aircraft simulators * with M.K.Komoda(Concordia), L.D.Reid(Toronto), A.Delorme, J.Frigon(Montréal), G.M.McKinnon, S.R.Stober, B.Welch(CAE Electronics Ltd. Montréal) 3yr - 1st Inst.	Group	113,500
Chakrabarti, C.L. Chemistry Carleton	A new analytical technique for trace-element pollutants in Canadian fossil fuels 3yr - 1st Inst.	Individual	40,000
Cheeke, J.D.N. Physique Sherbrooke	Microscopie acoustique à basse température 3ans - 2e vers.	Individuelle	56,180
Childs, R.F. Chemistry McMaster	Piezodialysis radial flow cell system	Equipment	12,000

Open / Ouvert - 1983-84 (continued / suite)

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Childs, R.F. Chemistry McMaster	Charge mosaic piezodialysis membranes * with J.M.Dickson, B.E.McCarry(McMaster) 3yr - 1st Inst.	Group	57,500
De Mayo, P. Chemistry Western Ontario	Surface photochemistry and photophysics of adsorbed molecules * with W.R.Ware(Western Ontario) 2yr - 1st Inst.	Group	37,000
Dimroth, E. Géologie Québec-Chicoutimi	Modélisation des évolutions géologiques et métallogéniques de la ceinture Abitibi * avec Y.Héroux,K.Schrijver(Qué.- I.N.R.S.),M.Rocheleau(Laval), G.Archambault,J.Carignan, E.H.M.Chown,J.Guha(Qué.- Chicoutimi),N.Goulet(Qué.- Montréal) 3ans - 2e vers.	Groupe	74,200
Drouin, G. Génie mécanique Ecole Polytechnique	Elaboration d'un modèle biomécanique du genou * avec R.Doré,J.M.Dorlot,G.McIntyre, P.S.Thiry(Ecole Polytech.), G.R.Tremblay,C.A.Laurin(Montréal) 3ans - 3e vers.	Groupe	141,998
Dumbroff, E.B. Biology Waterloo	Drought tolerance and physiological mechanisms of resistance in coniferous planting stock * with J.E.Thompson(Waterloo) 3yr - 1st Inst.	Group	30,000
Dusseault, M.B. Earth Sciences Waterloo	Salt rock mine design 2yr - 1st Inst.	Individual	49,146
Finch, J.A. Mining/Metal. Eng. McGill	Mineral processing of fine particles * with A.R.Laplante, N.Rowlands(McGill) 3yr - 1st Inst.	Group	50,000
Fredlund, D.G. Civil Engineering Saskatchewan	Engineering behavior of expansive soils 3yr - 3rd Inst.	Individual	55,848
Fritz, P. Earth Sciences Waterloo	Occurrence and genesis of methane in the Canadian Shield * with J.F.Barker,S.K.Frape, E.J.Reardon,C.Mayfield(Waterloo) 2yr - 1st Inst.	Group	38,160
Funt, B.L. Chemistry Simon Fraser	Electrochemical preparation of conducting polymers 3yr - 1st Inst.	Individual	32,730
Fyles, T.M. Chemistry Victoria	Polymeric coupled transport membranes for metal recovery 3yr - 2nd Inst.	Individual	47,700

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Gale, J.E. Earth Sciences Memorial	Groundwater flow systems in fractured crystalline rocks - application to mineral exploration and toxic waste disposal * with B.J.Fryer, S.A.Macko, D.F.Strong(Memorial) 3yr - 1st Inst.	Group	80,000
Goldenberg, A.A. Mechanical Eng. Toronto	Robotic based integrated industrial automation * with R.G.Fenton, K.C.Smith, J.A.Buzacott(Toronto) 2yr - 1st Inst.	Group	86,000
Grandmaison, E.W. Chemical Eng. Queen's	Dryforming technology 3yr - 2nd Inst.	Individual	26,712
Guillet, J.E. Chemistry Toronto	Design, synthesis and characterization of polymers for high technology applications * with M.A.Winnik, D.F.James, S.G.Whittington, W.F.Reynolds(Toronto) 3yr - 1st Inst.	Group	150,000
Hamielec, A.E. Chemical Eng. McMaster	Development of polymer production technology * with T.W.Hoffman, J.F.MacGregor(McMaster) 3yr - 3rd Inst.	Group	76,049
Keenan, F.J. Forestry Toronto	A unified design method for joints in wood structures * with G.T.Will(Toronto) 3yr - 1st Inst.	Group	30,180
Kokta, B.V. Pâtes et papiers Qué.-Trois-Riv.	Appareil et accessoires pour l'évaluation des composites	Appareillage	56,166
Kresge, A.J. Chemistry Toronto	Prostacyclin: Biotechnological applications 3yr - 2nd Inst.	Individual	24,831
Levine, M.D. Electrical Eng. McGill	The application of robotics to electronic inspection, repair and assembly * with V.K.Agarwal, P.R.Belanger, A.S.Malowany, S.W.Zucker(McGill) 3yr - 2nd Inst.	Group	105,868
Martin-Sanchez, J.M. Chemical Eng. Alberta	Industrial implementation for adaptive predictive control system 2yr - 2nd Inst.	Individual	27,348
McBean, E.A. Civil Engineering Waterloo	Design of acid rain abatement strategies incorporating uncertainty * with G.J.Farquhar(Waterloo) 3yr - 1st Inst.	Group	16,100
McLean, A. Metal/Mat. Science Toronto	Advanced steelmaking processes * with C.B.Alcock, I.D.Sommerville(Toronto) 3yr - 1st Inst.	Group	180,000

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Nadeau, J.S. Metallurgical Eng. British Columbia	Delayed failure of composite * with E.Teghtsoonian, R.J.Gray(British Columbia) 3yr - 1st Inst.	Group	60,000
Passmore, J. Chemistry New Brunswick	The preparation and characterisation of novel conducting polymers and related materials 3yr - 1st Inst.	Individual	41,304
Pharis, R.P. Biology Calgary	Tree improvement: Anatomical, physiological and biochemical approaches to obtaining early and enhanced seed production in conifers * with J.N.Owens(Victoria) 3yr - 1st Inst.	Group	70,000
Russell, R.D. Geophys./Astron. British Columbia	Application of theory of geophysical measurement to the development of field instrumentation, with emphasis on information theory approaches * with T.Watanabe(U.B.C.) 3yr - 2nd Inst.	Group	54,060
Seguin, H.U.J. Electrical Eng. Alberta	High power CO2 laser development system	Equipment	49,000
Seguin, H.U.J. Electrical Eng. Alberta	Glow discharge stabilization with magnetic fields * with C.E.Capjack(Alberta) 3yr - 1st Inst.	Group	50,000
Simkin, D. Chemistry McGill	Development of tuneable ultraviolet lasers 3yr - 2nd Inst.	Individual	42,400
Simkin, D.U. Chemistry McGill	High speed data acquisition system	Equipment	50,000
Stoicheff, B.P. Physics Toronto	Lasers and quantum optics * with S.C.Wallace,G.A.Kenney-Wallace, H.M.Van Driel,A.D.May,J.E.Sipe, J.C.Polanyi(Toronto) 3yr - 1st Inst.	Group	300,000
St-Pierre, L.E. Chemistry McGill	The development of specific polymer sorbents for removal of bilirubin from plasma * with G.R.Brown,W.C.Galley(McGill) 3yr - 1st Inst.	Group	40,000
Tavenas, F. Génie civil Laval	Etude de la compressibilité et de la consolidation des argiles * avec S.Leroueil(Laval) 3ans - 3e vers.	Groupe	69,116
Tlusty, J. Mechanical Eng. McMaster	Unmanned machining and robotics * with R.Kitai,N.Sinha(McMaster)	Group	72,000

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Tulip, J. Electrical Eng. Alberta	Laser neurosurgery * with J.McKean(University of Alberta Hospital) 2yr - 2nd Inst.	Group	42,400
Valade, J.L. Pâtes et papiers Qué.-Trois-Riv.	Valorisation des feuillus * avec B.V.Kokta,Z.Koran,M.Lapointe, S.N.Lo,K.N.Law(Qué.-Trois- Rivières) 3ans - 2e vers.	Groupe	143,100
Weinberg, F. Metallurgical Eng. British Columbia	Semiconductor crystal growing apparatus with cutting, polishing and ancillary equipment	Equipment	50,000
Weinberg, F. Metallurgical Eng. British Columbia	The growth of crystals for the electronic industry * with I.V.Samarasekera(British Columbia) 3yr - 1st Inst.	Group	49,000

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Berczi, I. Immunology Manitoba	Production of human antibodies to lipid A * with G.J.T.Delespesse, A.Sehon(Manitoba) 3yr - 1st Inst.	Group	38,259
Bone, D.H. Chemical Eng. Queen's	Microbial fractionation of native biomass to lignin, cellulose and hemicellulose * with A.U.Daugulis(Queen's) 3yr - 3rd Inst.	Group	29,707
Chartrand, P. Microbiologie Sherbrooke	Valorisation de la lignine à l'aide de catalyseurs biologiques * avec C.Roy(Sherbrooke) 3ans - 1er vers.	Groupe	53,414
Chornet, E. Génie chimique Sherbrooke	Dépolymérisation séquentielle des matières lignocellulosiques: mise au point d'une technologie de prétraitement axée sur la dégradation polymérique sous cisaillement 3ans - 1er vers.	Individuelle	68,400
Church, R.B. Medical Biochem. Calgary	Animal gene transfer * with G.A.Schultz(Calgary) 3yr - 1st Inst.	Group	53,000
Daugulis, A.J. Chemical Eng. Queen's	Process engineering of solvent extraction coupled fermentations for product recovery * with R.H.Clark,D.H.Bone(Queen's) 3yr - 2nd Inst.	Group	37,100
De Bold, A.J. Pathology Queen's	The application of biotechnology to the commercialization of cardionatrin I * with T.G.Flynn, P.L.Davies,J.Roder(Queen's) 2yr - 1st Inst.	Group	157,600
De la Noue, J. Ctre rech. nutrition Laval	Traitement biotechnologique tertiaire des eaux usées et production de protéines d'unicellulaires * avec G.Picard, R.Guay,J.Turcotte(Laval) 3ans - 2e vers.	Groupe	32,860
Forsberg, C.W. Microbiology Guelph	Acetone-butanol fermentation * with L.N.Gibbins(Guelph) 3yr - 2nd Inst.	Group	34,878
Friesen, J.D. Medical Genetics Toronto	Recombinant DNA technology: Development of novel classes of expression vehicles * with R.E.Pearlman(York) 3yr - 1st Inst.	Group	85,400
Gaucher, G.M. Chemistry Calgary	Microbial and animal cell bioreactors * with B.H.Lesser, L.A.Behie(Calgary)	Group	132,000

Biotechnology / Biotechnologie - 1983-84 (continued / suite)

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Glick, B.R. Biology Waterloo	Development of Azotobacter as a bacterial fertilizer by the introduction of exogenous cellulase genes * with J.J.Pasternak(Waterloo) 3yr - 1st Inst.	Group	55,500
Grigliatti, T.A. Zoology British Columbia	Bio-engineering: Modifying drosophila transposable elements to act as insect pest control vectors * with H.W.Brock(British Columbia) 2yr - 1st Inst.	Group	63,000
Hrudey, S.E. Civil Engineering Alberta	Anaerobic biological treatment of phenolics * with D.Westlake, N.Berkowitz, D.W.Smith, P.M.Fedorak(Alberta) 3yr - 1st Inst.	Group	33,800
Hudson, G.R. Veter. Microbiol Saskatchewan	Vaccine for prevention of neonatal calf diarrhea caused by enteric rota and corona viruses * with L.A.Babiuk(Sask.) 3yr - 2nd Inst.	Group	105,422
Ishiguro, E.E. Biochem./Microbiol. Victoria	An application for a refrigerated centrifuge	Equipment	18,244
Ishiguro, E.E. Biochem./Microbiol. Victoria	Development of a vaccine for furunculosis, a bacterial disease of salmonids * with W.W.Kay, T.J.Trust(Victoria) 3yr - 1st Inst.	Group	78,500
Iyer, V.N. Biology Carleton	Molecular genetics of Rhizobium meliloti and its plasmids * with R.M.Behki, R.J.Watson(Canada Agriculture, Chem. and Biology Res. Inst.) 3yr - 2nd Inst.	Group	72,292
Jay, E. Chemistry New Brunswick	Studies and optimization of synthetic E coli ribosome binding sites in industrial applications for the expression and production of mammalian proteins in bacteria 3yr - 3rd Inst.	Individual	112,647
Jay, F.T. Microbiology Manitoba	Rabies 3yr - 2nd Inst.	Individual	26,500
Jay, F.T. Microbiology Manitoba	Ultracentrifuge and vertical rotor	Equipment	43,490
Johnson, D.A. Biology Ottawa	Engineering of a transfer system for Rhizobium japonicum: application to inoculant improvement 3yr - 2nd Inst.	Individual	8,480

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Jones, J.B. Chemistry Toronto	Enzyme-based syntheses of important biologically active products 3yr - 1st Inst.	Individual	31,019
Kasha, K.J. Crop Science Guelph	Evaluation of in vitro variability and selection potential in crop species * with W.D.Beversdorf, B.E.Ellis, B.D.McKersie, R.L.Peterson, D.T.Tomes(Guelph) 3yr - 2nd Inst.	Group	136,740
King, J. Biology Saskatchewan	The liposome-mediated transfer of chromosomes into auxotrophic cells of Datura 3yr - 3rd Inst.	Individual	42,777
Kluepfel, D. Bactériologie Québec - IAF	Modifications de souches de Streptomyces par génie génétique pour l'hyperproduction de cellulases et xylanase extracellulaires * avec R.Morosoli, F.Shareck(IAF) 3ans - 1er vers.	Groupe	58,500
Kropinski, A.M. Microbiology Queen's	The development of an economical fermentation process for the production of organic solvents from biomass * with G.W.Hay, W.A.Szarek(Queen's) 3yr - 3rd Inst.	Group	71,296
Kushner, D.J. Biology Ottawa	Regulation of cellulase production in industrially important microorganisms 2yr - 2nd Inst.	Individual	28,090
Kutney, J.P. Chemistry British Columbia	Microbial transformation of tall oil - an important Canadian resource for clinically important steroidal drugs 2yr - 1st Inst.	Individual	73,500
Kutney, J.P. Chemistry British Columbia	Studies on detoxification of pulp mill effluents. The biological degradation of fish toxic substances as an approach to improvement of water quality 2yr - 2nd Inst.	Individual	84,948
Kutney, J.P. Chemistry British Columbia	Development of plant tissue and cell culture fermentations as a source for antineoplastic agents. An approach to pharmaceutically important products * with P.M.Townsley(U.B.C.) 3yr - 2nd Inst.	Group	63,066
Lachance, M.A. Plant Science Western Ontario	High yield pentose fermenting yeasts for immobilized cell bioreactors * with A.Margaritis(Western Ontario) 3yr - 2nd Inst.	Group	32,945

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
LeDuy, A. Génie chimique Laval	Production du polysaccharide pullulan par le procédé de fermentation à bi-stage 2ans - 1er vers.	Individuelle	31,140
LeDuy, A. Génie chimique Laval	Montage de fermentation à bi-stage pour la production du polysaccharide pullulan	Appareillage	19,592
Lo, K.V. Bio-Res. Eng. British Columbia	Biological process application for biogas production and waste treatment * with N.R.Bulley(U.B.C.) 3yr - 2nd Inst.	Group	44,520
Mayfield, C.I. Biology Waterloo	Hydrocarbon production from algal and fungal biomass * with W.B.Kendrick, J.E.Thompson(Waterloo) 3yr - 2nd Inst.	Group	50,880
Miller, R.C. Microbiology British Columbia	Cloning and expression of cellulase genes * with D.G.Kilburn,R.A.J.Warren(B.C.) 3yr - 2nd Inst.	Group	117,321
Moo-Young, M. Chemical Eng. Waterloo	Waste utilization in SCP production * with J.M.Scharer(Waterloo), J.D.Cunningham,J.C.Alexander, S.Leeson(Guelph),S.P.Touchburn, E.R.Chavez(Macdonald) 3yr - 1st Inst.	Group	60,500
Moo-Young, M. Chemical Eng. Waterloo	Upgrading waste biomass into methane fuel gas by anaerobic fermentation * with J.M.Scharer, C.W.Robinson(Waterloo) 3yr - 3rd Inst.	Group	19,250
Moreau, P. Biology Ottawa	Cloning of cDNA of major antigen of pseudorabies virus and expression in E. coli 3yr - 1st Inst.	Individual	43,700
Newman, E.B.S. Biology Concordia	Production of ammonia & biochemicals by bacteria 3yr - 1st Inst.	Individual	44,100
Nolan, R.A. Biology Memorial	A study of the molecular basis of Entomophthora egressa virulence for the spruce budworm and of mycovirus occurrence in E. egressa * with W.S.Davidson(Memorial) 3yr - 2nd Inst.	Group	39,680
Reha-Krantz, L.J. Genetics Alberta	Developing and testing mutator DNA polymerases as useful reagents for in vitro mutagenesis 2yr - 2nd Inst.	Individual	33,390
Robinson, C.W. Chemical Eng. Waterloo	Xylose-fermentation, immobilized-enzyme/yeast bioreactor * with M.Moo-Young(Waterloo) 3yr - 2nd Inst.	Group	40,439

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Roder, J. Micro/Immunology Queen's	The development of an efficient hybridoma process for the production of human monoclonal antibodies on an industrial scale 3yr - 2nd Inst.	Individual	63,600
Sasarman, A. Micro/immunologie Montréal	Biosynthèse de la vitamine B12: Effet du dosage génique et des mutations des voies connexes 2ans - 1er vers.	Individuelle	41,515
Sefton, M.V. Chem Eng/App Chem Toronto	Microencapsulation of live animal cells * with A.M.Sun(Toronto) 3yr - 2nd Inst.	Group	37,683
Stevenson, R.M.W. Microbiology Guelph	Development of a cloned IPNV vaccine and immunization strategy for brood stock fish * with P.Dobos(Guelph) 2yr - 1st Inst.	Group	32,000
Storms, R.K. Biology Concordia	Development of high expression plasmids for Saccharomyces cerevisiae * with M.B.Herrington(Concordia) 3yr - 1st Inst.	Group	28,060
Sylvestre, M. Bactériologie Québec - IAF	Développement de souches bactériennes à haut degré de biodégradation des BPC, faisant appel aux techniques de fusions de protoplastes et croisements sous pression de sélection * avec R.Massé(Qué.-I.N.R.S.) 2ans - 2e vers.	Groupe	31,800
Szarek, W.A. Chemistry Queen's	Development of a safe, effective, non-nutritive sweetening agent * with A.M.Kropinski, G.W.Hay(Queen's) 3yr - 2nd Inst.	Group	55,857
Taylor, K.E. Chemistry Windsor	Enzyme immobilization 3yr - 2nd Inst.	Individual	26,373
Thorpe, T.A. Biology Calgary	Forest improvement: Tissue culture propagation of conifers for reforestation * with D.I.Dunstan(Kelowna Nurseries) 3yr - 3rd Inst.	Group	47,530
Thorpe, T.A. Biology Calgary	Production of salt-tolerant plant strains in vitro * with D.M.Reid, E.C.T.Yeung(Calgary) 3yr - 2nd Inst.	Group	42,400
Tsezos, M. Chemical Eng. McMaster	Sorption of radium-226 from uranium mining/milling waste streams on biological adsorbents * with M.H.I.Baird, L.W.Shemilt(McMaster) 2yr - 2nd Inst.	Group	31,270

Name/Nom Department/Département University/Université	Title/Titre	Type/Genre	\$
Verma, D.P.S. Biology McGill	Infectivity genes of Rhizobium and their relationship with other phytopathogenic bacteria * with A.H.Bussey, M.Dubow, G.G.Brown(McGill) 3yr - 2nd Inst.	Group	71,232
Viswanatha, T. Chemistry Waterloo	B-lactamase inhibitors: A strategy for countering penicillin resistance * with G.I.Dmitrienko(Waterloo) 3yr - 2nd Inst.	Group	52,629
Watson, A.K. Plant Science Macdonald Coll.	Biological herbicides * with B.Volesky(McGill), E.S.Idziak, R.D.Reeleder(Macdonald) 3yr - 1st Inst.	Group	60,000
Webb, D.T. Biology Queen's	Clonal propagation of blister rust resistant Eastern White Pine 3yr - 1st Inst.	Individual	52,000
Webb, D.T. Biology Queen's	Research compound microscope for photomicrography	Equipment	12,851
Wolfe, S. Chemistry Queen's	Microbiological syntheses of novel beta-lactam compounds * with D.W.S.Westlake, S.E.Jensen(Alberta) 2yr - 1st Inst.	Group	87,240
Wood, J.M. Chemistry & Biochem Guelph	Microbial metabolite excretion: The role of membrane permeability in proline excretion by Escherichia coli and Saccharomyces cerevisiae 3yr - 1st Inst.	Individual	25,025
Yamazaki, H. Biochemistry Carleton	Development of film reactors applicable to ethanol production 3yr - 2nd Inst.	Group	33,920

For/À titre d'

INFORMATION

Ottawa Ontario
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NSERC Joins with Northern Telecom
and Queen's University to Promote
Canadian Microelectronics Technology

Le CRSNG s'associe à Northern Telecom
et à l'Université Queen's pour
favoriser l'industrie
micro-électronique au Canada

The Natural Sciences and Engineering Research Council (NSERC) has awarded a special project grant of \$75,000 to three Queen's University professors for the establishment and operation of a coordinating office to interface between Canadian universities and Northern Telecom in a program of VLSI (very large-scale integration) chip designs.

Le Conseil de recherches en sciences naturelles et en génie (CRSNG) vient d'accorder une subvention pour projet spécial de \$75 000 à trois professeurs de l'Université Queen's pour mettre sur pied un bureau de coordination qui assurera la liaison entre les universités canadiennes et Northern Telecom, dans le cadre d'un programme de conception de "puces" de circuits intégrés VLSI (very large scale integration: circuits intégrés à très grande échelle).

Under this program, Northern Telecom Limited is offering free silicon fabrication services to the Canadian university community. The coordinating office to be established with NSERC funds will initially be located at Queen's University's Department of Electrical Engineering. The office will collect and distribute technical information and computer software relating to VLSI design, will collect, verify and convert VLSI design files from participating universities to the necessary data format for multiproject chip fabrication, and will manage the logistics involved with fabrication, bonding and distribution of the multiproject chips. The office will also produce a regular VLSI newsletter coupled with an electronic mail system to improve communications within the VLSI community.

Northern Telecom Ltée met ainsi gratuitement ses installations de fabrication à la disposition de la collectivité universitaire du Canada. Le bureau de coordination, qui sera mis sur pied grâce à une subvention du CRSNG, sera tout d'abord situé au Département de génie électrique de l'Université Queen's. Le bureau rassemblera et distribuera les informations techniques et le logiciel relatif à la conception des VLSI. Il rassemblera, vérifiera et transformera les données sur les VLSI soumises par les universités participantes pour les adopter à son système de fabrication de puces "multiprojets". Le bureau s'occupera également de la fabrication, de la fixation et de la distribution des puces de circuits intégrés. Enfin, il publiera régulièrement un bulletin sur les VLSI et mettra sur pied un système de courrier électronique pour

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améliorer les communications entre les chercheurs qui travaillent dans ce domaine.

The program will allow each of twelve universities to submit four VLSI designs, twice a year, for fabrication at Northern Telecom.

Le programme permettra à douze universités de soumettre chacune, deux fois par année, quatre projets de VLSI qui seront fabriqués par Northern Telecom.

August 1982

août 1982

For further information, please contact:

Pour de plus amples informations, veuillez communiquer avec:

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DR. R.J.A. LÉVESQUE NAMED
NSERC VICE-PRESIDENT

Dr. Gordon MacNabb, President of the Natural Sciences and Engineering Research Council (NSERC), is pleased to announce the appointment of Dr. René J.A. Lévesque, Vice-Rector of Research at the University of Montréal, as Vice-President of the Council. Dr. Lévesque was elected by the Council at its November 1980 meeting, and this appointment was recently ratified by the Governor in Council. He replaces Dr. Larkin Kerwin, a former Rector of Laval University who resigned from NSERC to take up the Presidency of the National Research Council of Canada last July.

Born in St-Alexis, Québec, Dr. Lévesque obtained a B.Sc. from Sir George Williams University (now Concordia) in 1952 and a Ph.D. in Physics from Northwestern University in 1957. In 1959, Dr. Lévesque joined the Department of Physics of the University of Montréal as Assistant Professor. He became Associate Professor in 1964 and Head of the Department in 1968. From 1965 to 1969, he was also Director of the Nuclear Physics Laboratory at the University. In 1973, he was appointed Vice-Dean of Research for the Faculty of Arts and Science, becoming Dean in 1975. He held this position until 1978 when he was appointed Vice-Rector of Research, the position he holds today.

LE DOCTEUR R.J.A. LÉVESQUE EST
NOMMÉ VICE-PRÉSIDENT DU CRSNG

Le Dr Gordon MacNabb, Président du Conseil de recherches en sciences naturelles et en génie (CRSNG), est heureux d'annoncer la nomination du Dr René J.A. Lévesque comme vice-président du Conseil. Vice-recteur à la recherche à l'Université de Montréal, le Dr Lévesque a été élu par le Conseil lors de son assemblée de novembre 1980 et cette nomination a récemment reçu l'approbation du Gouverneur-en-Conseil. Le Dr Lévesque succède au Dr Larkin Kerwin, ancien recteur de l'Université Laval, qui démissionnait du CRSNG lors de sa nomination à titre de Président du Conseil national de recherches du Canada en juillet dernier.

Né à St-Alexis, Québec, le Dr Lévesque obtint un B.Sc. de l'Université Sir George Williams (maintenant Concordia) en 1952 et un Ph.D. en physique de l'Université Northwestern en 1957. En 1959, le Dr Lévesque s'est joint au département de physique de l'Université de Montréal comme professeur adjoint. Il devint professeur agrégé en 1964 et directeur du département en 1968. De 1965 à 1969, il était directeur du Laboratoire de physique nucléaire à l'Université. En 1973, il fut nommé vice-doyen à la recherche de la faculté des arts et des sciences devenant doyen en 1975. Il occupa ce poste jusqu'en 1978 lorsqu'il fut nommé vice-recteur à la recherche, le poste qu'il occupe aujourd'hui.

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Dr. Lévesque's many contributions to the Canadian scientific community include being a member of the NRC Advisory Board for TRIUMF, Chairman of the Board of Directors for the Canada-France-Hawaii Telescope, immediate past Vice-Chairman of the Board of Directors for the Interciencia Association, past Chairman of the Permanent Committee for Research of the Council of Rectors and Principals of Québec Universities, and immediate past President of SCITEC. Dr. Lévesque is the author of many scientific papers.

In his role as Vice-President of NSERC, Dr. Lévesque will serve as ex officio member of all of Council's permanent committees, represent Council at various functions, and may replace the President in his absence. In addition, he will assist Dr. MacNabb with the provincial consultations required for the implementation of the initiatives outlined in Council's Five-Year Plan.

February 1981

For more information, contact:

Marilyn A. Hladkowicz
Information Officer
Natural Sciences and Engineering
Research Council
Ottawa, Ontario
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Les nombreuses contributions du Dr Lévesque à la communauté scientifique canadienne incluent sa participation comme membre de la commission consultative de TRIUMF (CNRC) et la présidence du Conseil d'administration de la Société du Télioscope Canada-France-Hawaï; de plus, le Dr Lévesque est le vice-président sortant du Conseil d'administration de l'association Interciencia, un ex-président du Comité permanent de la recherche de la Conférence des recteurs et des principaux des universités du Québec, et le président sortant de SCITEC. Le docteur Lévesque est l'auteur de plusieurs publications scientifiques.

En tant que vice-président du CRSNG, le Dr Lévesque sera membre d'office de tous les comités permanents du Conseil, représentera le Conseil lors de diverses fonctions et pourra remplacer le président en son absence. De plus, il participera avec le Dr MacNabb aux consultations avec les représentants des provinces pour la mise en oeuvre des nouvelles mesures décrites dans le plan quinquennal du Conseil.

février 1981

Pour de plus amples renseignements, s'adresser à:

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COMMUNIQUE

NSERC AWARDS \$32.8 MILLION IN SCIENTIFIC EQUIPMENT GRANTS

Ottawa - July 13, 1984 -
The Natural Sciences and Engineering Research Council today announced that university researchers have been awarded \$32.8 million for the acquisition of new equipment. The grants, which will be used to purchase a great variety of the most advanced scientific and engineering tools available, range in size from a \$2 million commitment to researchers at the University of Montreal for the funding of a national facility for gamma-ray spectroscopy to a \$7,000 award to a University of Guelph zoologist for the purchase of an ultra-cold freezer for tissue storage.

In announcing the awards, Gordon MacNabb, President of NSERC, said that money spent on scientific equipment is an important investment for Canada's future. "A challenging university research environment is essential to keep our brightest young research talent in the country. Only by keeping our labs up-to-date can we remain competitive in fast-evolving technologies."

LE CRSNG ACCORDE DES SUBVENTIONS D'APPAREILLAGE SCIENTIFIQUE S'ÉLEVANT À \$32,8 MILLIONS

Ottawa - le 13 juillet 1984 -
Le Conseil de recherches en sciences naturelles et en génie a annoncé aujourd'hui l'octroi de \$32,8 millions à des chercheurs universitaires en sciences et en génie pour leur permettre d'acheter une grande variété d'appareils de recherche très perfectionnés. Le montant des subventions varie beaucoup, allant d'une subvention de \$7 000 à un zoologiste de l'Université de Guelph en vue d'acheter un congélateur ultra-froid pour conserver les tissus à un octroi de \$2 millions à des chercheurs de l'Université de Montréal pour contribuer au financement d'une installation nationale de spectroscopie à rayons gamma.

En annonçant ces subventions, M. Gordon MacNabb, président du CRSNG, a souligné que les fonds consacrés à l'appareillage scientifique constituent un investissement important pour l'avenir du Canada. "Une atmosphère stimulante pour la recherche universitaire est essentielle pour inciter nos jeunes chercheurs les plus brillants à demeurer au pays. Ce n'est qu'en modernisant nos laboratoires que nous pouvons demeurer compétitifs dans les technologies en évolution rapide."

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The replacement of obsolete equipment in our universities has been a major thrust of NSERC's goal to improve the state of science and engineering research in Canada. Over the past five years, the federal agency has directed more than \$160 million towards this purpose.

NSERC equipment grants are awarded through a Canada-wide competition. The final selections are made by Council on the basis of recommendations from peer review committees. For the 1984 competition, NSERC received over 1,400 applications, of which just over one-third were funded.

Remédier à la désuétude des appareils de recherche universitaire, voilà l'une des initiatives importantes du CRSNG pour améliorer la recherche en sciences et en génie au Canada. En effet, depuis cinq ans, cet organisme fédéral a consacré plus de \$160 millions à cette fin.

Les subventions d'appareillage du CRSNG sont accordées dans le cadre d'un concours pancanadien. Le Conseil fait la sélection finale, à partir de recommandations de comités d'évaluation par les pairs. Lors du concours de 1984, le CRSNG a reçu plus de 1 400 demandes, dont un peu plus du tiers ont été subventionnées.

Attention News Editors/Science Writers

The announcement of the results of the 1984 competition provides an excellent vehicle to bring your readers up-to-date on what is happening in science and technology in your community. University researchers are more than willing to talk about their new equipment - and more than not, there is a good story waiting to be written about their work on the frontiers of science.

Aux chefs des nouvelles et aux communicateurs scientifiques

Cette annonce des résultats du concours de 1984 vous fournit une excellente occasion d'informer vos lecteurs des derniers développements scientifiques et technologiques dans votre collectivité. Les chercheurs universitaires sont toujours intéressés à parler de leurs nouveaux appareils et, dans la plupart des cas, vous pourrez trouver matière à préparer un article ou un bulletin intéressant sur leurs travaux à la fine pointe de la science.

For your convenience, I have attached a list of the 1984 grants. Please feel free to contact the university, or me, for additional information.

Arnet Sheppard
Information Officer
Natural Sciences and Engineering
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200 Kent Street
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Attch.

Voilà pourquoi vous trouverez ci-joint la liste des subventions de 1984. N'hésitez pas à communiquer avec l'université ou avec moi si vous désirez obtenir de plus amples renseignements.

Arnet Sheppard
Agent d'information
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p.j.

Major Installation Grants / Subventions d'installations spéciales
(valued over \$275,000 / valeur de plus de \$275 000)

Taras, P. Physique Université de Montréal	Le spectromètre 8 pi - installation nationale pour la spectroscopie aux rayons gamma / The 8 pi spectrometer - a national facility for gamma-ray spectroscopy	\$ 2,000,000
MacLean, D.B. Chemistry McMaster University	High resolution mass spectrometry facility	626,050
Yelon, A. Génie physique École Polytechnique	Appareillage pour l'analyse des surfaces et des couches minces	600,000
Clarke, B. Geology Dalhousie University	New electron microprobe laboratory	525,000
Harrison, A.G. Chemistry University of Toronto	Mass spectrometry facility	455,328
Goldak, J. Mechanical Engineering Carleton	Attached processor for computer integrated design and manufacturing	451,591
Bryman, D.A. TRIUMF Victoria	Rare kaon decay spectrometer	429,600
Ouellet, Y. Génie civil Laval	Système de calcul pour traitement interactif moyen et lourd en modélisation, simulation et traitement du signal	428,044
Baadsgaard, H. Geology Alberta	Fully automatic high precision mass spectrometer	332,670
Strong, D.F. Earth Sciences Memorial	Inductively coupled plasma/mass spectrometer	269,480

Equipment Awards / Subvention d'appareillage

To help you locate awards to researchers in your province, we have arranged universities alphabetically within each provincial grouping. / Pour vous permettre de retrouver facilement les chercheurs, les universités sont groupées par province, en ordre alphabétique.

British Columbia / Colombie britannique	p. 1
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New Brunswick / Nouveau-Brunswick	p. 15
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Atwater, J.W. Civil Engineering British Columbia	Autosampler, PID detector and purge and trap sampler as an add on to existing gas chromatograph * with W.K.Olthoff, K.J.P.Hall (UBC)	14,372	Class, A.D. Botany British Columbia	Low temperature growth cabinet	12,000
Black, T.A. Soil Science British Columbia	ED4 correlation system for forest evapotranspiration research * with M.D.Mosak (UBC)	8,255	Gosline, J.H. Zoology British Columbia	Microscope-based laser light scattering apparatus	23,846
Blake, R.W. Zoology British Columbia	Digital storage oscilloscope	33,275	Grace, J.R. Chemical Eng. British Columbia	Ultra-violet and instrumentation tape recorders * with C.J.Liu (UBC)	40,962
Boutlier, R.S. Zoology British Columbia	Microelectrode implantation and recording apparatus	33,000	Green, R.R. Botany British Columbia	Fluorescence induction kinetics apparatus	9,700
Brock, H.W. Zoology British Columbia	High speed centrifuge and one rotor * with T.A.Grigliatti	17,000	Griffiths, A.J.F. Botany British Columbia	Preparative ultracentrifuge and one rotor * with J.C.McPherson (UBC)	46,000
Bustin, R.W. Geological Sciences British Columbia	Computerized data acquisition and analysis equipment	22,000	Grigliatti, T.A. Zoology British Columbia	Transformation equipment	20,142
Campanella, R.G. Civil Engineering British Columbia	Continuous soil sampler system with X-ray logging * with P.K.Robertson (UBC)	44,614	Gush, H. Physics British Columbia	Helium cooled two-beam interferometer	52,943
Chanson, S.T. Computer Science British Columbia	In interactive computing facility for system development * with R.D.Brasen, G.P.Schack, L.A.H.McDonald, P.Pelzer, R.S.Rosenberg, J.H.Varah, P.J.Yoda, S.T.Wu, P.C.Gilmore (UBC)	166,132	Hasinoff, M.D. Physics British Columbia	Gamma-ray converter for neutral particle detection in the TRIUMF TPC * with P.H.M.Depommier, L.Lessard (Montréal)	34,100
Cherchas, D.B. Mechanical Eng. British Columbia	Minicomputer for existing research facilities in computer aided manufacturing, wood cutting research, alternate fuels experimentation and aerodynamics research * with J.P.Duncan, P.Sassani, S.G.Hutton, R.L.Evans, J.S.Gartshore, V.J.Modi, G.V.Parkinson (UBC)	117,068	Isman, M.B. Plant Science British Columbia	High performance liquid chromatography system	42,900
Church, M.A. Geography British Columbia	Field oriented high speed data acquisition system * with D.G.Steyn (UBC)	22,500	Leplond, P.H. Oceanography British Columbia	Current meters * with W.J.Perry, G.S.Pond (UBC)	42,780
Cole, K.W. Botany British Columbia	High vacuum coating plant for electron microscopy * with M.W.Hawkes, J.W.D.Garbar, L.A.P.Oliveira, P.J.R.Taylor, P.J.Harrison, G.G.E.Schwader, A.M.Perks, J.M.Gosline, J.E.Phillips (UBC)	27,140	Love, L.E. Soil Science British Columbia	Total organic carbon analyzer	19,516
Dutton, G.G.S. Chemistry British Columbia	Capillary column gas chromatograph	37,100	Martin, P.W. Physics British Columbia	Multichannel analyzer * with B.G.Turrell (UBC)	35,700
Ellis, P.H. Geophys./Astron. British Columbia	Portable seismic data acquisition systems (2) * with W.H.Cloves (UBC)	25,174	McPherson, J.C. Botany British Columbia	Centrifuge * rotors	17,000
Fahman, G.G. Geophys./Astron. British Columbia	Astronomical data analysis facility * with P.Hickson, H.B.Richer, G.A.H.Walker, T.K.Menon, M.Yedlin (UBC)	225,000	Milsoa, W.K. Zoology British Columbia	Equipment for non-invasive monitoring of respiration	21,000
Gartshore, I.S. Mechanical Eng. British Columbia	Pulsed wire anemometer with control unit and ancillary equipment	16,211	Myers, J. Plant Science British Columbia	Leaf area meter	8,070
			Nadeau, J.S. Metallurgical Eng. British Columbia	Acoustic emission measuring equipment * with P.Frithson (UBC)	38,626

Wakal, S. Food Science British Columbia	Fluorescence spectrophotometer for protein studies, vitamin analyses and enzymic deterioration determination * with J. Vanderstoep (UBC)	36,339	Prinitt, R.P. Physics Simon Fraser	Scanning auger microscope (SAM) * with S.R. Macdonald, H.I.W. Rhewalt, A.E. Curzon, S. Gygi, A.S. Alcott (SPU)	266,528
Oke, T.W. Geography British Columbia	Mobile meteorological tower for eddy flux measurement	19,965	Hrusser, O.P. Physics Simon Fraser	Local plane polarimeter for upgraded MRS: wire choppers and readout system * with R. Abegg, C.A. Miller, D.A. Hutcheon (Alberta), T.E. Drake (Toronto)	65,700
Oldham, W.K. Civil Engineering British Columbia	Mobile pilot-scale biological sewage treatment plant * with D.S. Navin (UBC)	140,000	Mathewes, R.W. Biolog. Sciences Simon Fraser	Components to complete assembly of Zeiss research microscope	7,714
Phillips, J.E. Zoology British Columbia	pH stat with gas mixture pump	24,000	Thevelt, M.L.W. Physics Simon Fraser	Dewar and detector system for FTIR studies of bound excitons * with B.P. Clayman (SPU)	15,032
Fulfey, D.L. Electrical Eng. British Columbia	Microelectronics equipment * with I. Young (UBC)	56,317	Ashwood-Smith, M.J. Biology Victoria	High performance liquid chromatographic (HPLC) facility * with R.D. Burke (Victoria)	25,000
Pussell, S.O. Civil Engineering British Columbia	Colour graphics system and VAX disk expansion * with P.R. Byrne, R.C. Campanella, W.P. Casselton, R.P. Hooley, P.D. Ravin, B.D. Sison, J.A. Russell, M.A. Spencer, S.P. Stiefel, P.O. Foschi (UBC)	108,968	Bruton, I.T. Electrical Eng. Victoria	Research computer for real-time signal processing and simulation * with A. Antoniou (Victoria)	69,235
Scheffer, J.P. Chemistry British Columbia	Capillary gas chromatograph	23,549	Puckley, J.T. Biochem./Microbiol. Victoria	Surface barostat	25,000
Steeves, J.D. Zoology British Columbia	Electrostatic recorder	39,950	Bushnell, G.W. Chemistry Victoria	Single crystal X-ray diffractometer * with A. McAuley, R. Dixon, S.R. Stobart, R.H. Mitchell (Victoria)	150,000
Steyn, D.G. Geography British Columbia	Seven scientific data loggers	21,000	Chang, P.J.H. Computer Science Victoria	PDP-11/48 to VAX-11/750 upgrade * with M.R. Levy, R.M.S. Rozsypal, P. Kuskey, D.L. Parnas (Victoria)	125,000
Walker, D.C. Chemistry British Columbia	Positron annihilation lifetime counting equipment	31,703	Fyles, T.H. Chemistry Victoria	Pulse programmer * with R.R. Mitchell (Victoria)	9,455
Watkinson, A.P. Chemical Eng. British Columbia	Total organic carbon analyzer * with R.M.P. Branion, K.L. Pinder, K.V. Lo (UBC)	28,245	Olafson, R.W. Biochem./Microbiol. Victoria	Autotitration system * with A.T. Matheson (Victoria)	20,539
Weeks, G. Microbiology British Columbia	Spectrophotometer	21,000	Olafson, R.W. Biochem./Microbiol. Victoria	Gas-phase sequencer * with A.T. Matheson, T.W. Matheson, R. Koy, T.J. Trust (PCOR), R. Wilton, R. Koy, A.J. Trust (PCOR), R. Smith, D.E. Vance, R.T.A. MacGillivray, G. Haak, B.S. Molloy (UBC), D.I. Gailie, H.J. Smith, B.W. Ronda (SPU)	133,883
Weller, I.S. Chemistry British Columbia	High resolution NMR spectrometer * with R. O. Anderson, R. Cullen, D.M. Dolphin, M. Fryxell, B. R. Jones, J.P. Kutney, S.G. Withers (UBC)	274,980	Romanuk, P.J. Biochem./Microbiol. Victoria	Gradient elution HPLC system	25,000
Withers, S.G. Chemistry British Columbia	Fast protein liquid chromatography equipment	31,736	Romanuk, P.J. Biochem./Microbiol. Victoria	Low speed refrigerated centrifuge	17,000
Young, I. Electrical Eng. British Columbia	Microelectronics equipment * with D.L. Pulfrey (UBC)	201,560	Trust, T.J. Biochem./Microbiol. Victoria	Automatic ELISA microplate reader * with I.W. Pearson, M. Ray, M. Olafson, J.T. Buckley (Victoria)	24,500
Cushley, A.J. Chemistry Simon Fraser	Data station for NMR studies of membranes	55,525	Vickers, G.B. Electrical Eng. Victoria	Milling machine	68,480

Watton, A. Physics Victoria	38,000	Broadband NMR spectrometer * with H.E. Patch (Victoria)	Sm, P.R. Electrical Eng. Alberta	Motion analysis system	124,138
Ball, G.E. Entomology Alberta	22,550	Truck with living unit attached	Teply, S. Civil Engineering Alberta	Detailed traffic surveys	32,732
Cass, D.D. Botany Alberta	25,463	Ultracut "2" ultra-microtome and cryo- ultra-microtomy accessories	Thompson, J.P. Animal Science Alberta	Liquid scintillation counting system * with L.P. Milligan, R.J. Christopherson, B.A. Young (Alberta)	53,310
Clive, D.L.J. Chemistry Alberta	23,032	Capillary gas chromatograph * with J.C. Federas (Alberta)	Tulip, J. Electrical Eng. Alberta	Laser processing equipment	25,030
Crawford, R.J. Chemistry Alberta	197,500	300 MHz NMR spectrometer * with H.A. Ayer, D.L.J. Clive, R.A.G. Graham, O. Hindsgaul, G. Kotovych, H.J. Liu, J.W. Low, R.E. McClung, M.J. Robins, J.C. Federas (Alberta)	Zalik, S. Plant Science Alberta	Low temperature freezer	10,400
Divan, D.M. Electrical Eng. Alberta	26,500	Test facility for power electronics * with K.E. Bollinger (Alberta)	Bewley, J.D. Biology Calgary	Potors for ultracentrifuge	24,032
Egerton, R.P. Physics Alberta	56,247	High-resolution electron energy-loss spectrometer * with S.E. Wanke, S.A. Mahbotta (Alberta)	Birss, V.L. Chemistry Calgary	Solartron 1250 frequency response analyzer	24,244
Frank, J.P. Physics Alberta	44,315	Diamond anvil high pressure cell installation	Bland, R.H. Psychology Calgary	LSI-11C-23 laboratory computing system	36,157
Graham, W.A.G. Chemistry Alberta	18,287	Gas chromatograph	Cavey, M.J. Biology Calgary	Equipment for quantitative biological microanalysis * with B.R. McMahon (Calgary)	45,810
Greenhaus, L.G. Physics Alberta	23,000	Computer peripherals * with R. Abegg, J.R. Cameron, W.R. Dawson, D.A. Hatcher, G. Kitching, W.J. McDonald, R.A. Miller, G.A. Moss, G.C. Ralston, R.C. Osborn, G. R. M. Sheppard, H.S. Sherif, G.H. Stinson (Alberta)	Huber, R.E. Chemistry Calgary	To update gas-liquid chromatograph	14,082
Huck, P.W. Civil Engineering Alberta	24,675	Total organic halide (TOX) analyzer * with D.W. Smith (Alberta)	Krakiwsky, E.J. Surveying Eng Calgary	An image processing and graphics facility, and specialized computing laboratory for surveying and mapping * with J.A.R. Blais, C.S. Fraser, G.D. Lodwick, K.P. Schwarz (Calgary)	168,382
Lynch, D.T. Chemical Eng. Alberta	17,075	Catalytic reactor for high pressure and high temperature operation	Malik, O.P. Electrical Eng. Calgary	Logic implementation and test facilities * with T.H. Barton, G.S. Hope (Calgary)	29,410
Mackay, W.C. Zoology Alberta	18,770	Midwater trawling system with quantitative echo sounder * with E.E. Prepas (Alberta)	Mathews, T. Physics Calgary	Resonet data monitoring/recording system * with R.B. Hicks (Calgary)	18,255
Marshall, T.A. Computer Science Alberta	55,560	Experiments with multi-processor systems	Milone, E.F. Physics Calgary	Photometer and offset guider camera * with T.A. Clark, S. Kivok (Calgary), D.A. Naylor (Lethbridge)	47,000
Paratnam, M. Civil Engineering Alberta	32,875	Fibre optic LDA upgrade system * with A.W. Peterson (Alberta)	Pharis, R.P. Biology Calgary	High pressure/performance liquid chromatograph used/reconditioned	23,400
Scarfe, C.H. Geology Alberta	20,000	Viscometer for high-temperature silicate melt studies	Raymond, J.E. Psychology Calgary	Micro-computer controlled visual perception research	16,829
Seduin, H.J.J. Electrical Eng. Alberta	63,210	Scanning and recording mass-spectrometer * with R.P.W. Lawson, C.E. Rapjack (Alberta)	Stein, R.A. Electrical Eng. Calgary	Color graphic recorder * with J.W. Haslett, L.F. Turner, R.R. Smith (Calgary)	19,769

Walker, G. Mechanical Eng. Calgary	Siemens-Stirling research and development engine and test installation * with O.R.Fauvel (Calgary)	96,156	Sheer, R.R. Chemistry Saskatchewan	200 MHz NMR spectrometer * with G.D.Abrams, J.B.Dismock, E.M.Hawes, C.C.Lee, K.R.Midha, J.M.Pepper, J.M.Quail, J.B.Senior (Sask.)	274,814
Knight, J. Biology, Sciences Lethbridge	Transmission electron microscope	139,427	Steiss, J.E. Wet. Phys. Sci. Saskatchewan	Ultracentrifuge * with L.A.Babiuk, G.W.Porsyth, V.S.Gupta, V.Misra (Sask.)	46,000
Pood, S.B. Biology, Sciences Lethbridge	Radioactivity monitor for high pressure liquid chromatography	20,266	Stewart, J.W.B. Soil Science Saskatchewan	Mass spectrometer * with J.P.Bettany, D.W.Anderson, D.A.Pennie (Sask.)	165,000
Bakshi, M.M. Chemical Eng. Saskatchewan	GC-System to analyse reaction products from syn-gas fed tube-wall reactor	39,175	Waltz, W.L. Chemistry Saskatchewan	Transient recorder for fast reaction studies * with R.E.Verral, R.J.Woods (Sask.)	30,177
Bettany, J.B. Soil Science Saskatchewan	Ion chromatograph	45,996	Weil, J.A. Chemistry Saskatchewan	Electron spin resonance spectrometer accessories	54,420
Caldwell, M.G.P. Geological Sciences Saskatchewan	X-ray diffraction system * with E.G.Wisbet, T.R.Kyser, B.W.Renaut (Sask.)	150,000	Yang, M.Y.H. Computer Science Saskatchewan	Time-varying scene analysis laboratory	51,810
Caplan, H.S. Physics Saskatchewan	Saskatchewan accelerator laboratory computer * with J.C.Bergstrom, C.Hangacharyulu, R.Serivancha, D.M.Skopik, P.L.Tomaszak, E.J.Jansalido, R.A.Preston, W.L.Waltz (Sask.)	160,000	Bertrand, H. Biology Regina	High speed refrigerated centrifuge	17,000
Fowler, L.C. Biology Saskatchewan	Spectrophotometer and rapid sampler * with J.King, R.E.Gruen (Sask.)	21,000	Kelln, R.A. Chemistry Regina	Ultracentrifuge rotor	8,000
Gurta, M.M. Mechanical Eng. Saskatchewan	Microprocessor development system * with R.C.Wood, D.Dodds, P.T.Burton (Sask.)	59,559	Kirkpatrick, D.L. Chemistry Regina	Biological containment hood	8,500
Hirose, A. Physics Saskatchewan	Data acquisition system for STOR-1M and STOR-1M tokamaks	61,620	Rock, E. Chemistry Manitoba	NMR probes for double resonance experiments	21,496
Jelicicour, P. Psychology Saskatchewan	Projection tachistoscope and reaction time system	8,393	Bridges, E. Electrical Eng. Manitoba	Millimeter-wave six-port network analyzer system * with L.Shafai, A.Ittipiboon (Manitoba)	14,011
Khachatourians, G. Micro. & Food Sc. Saskatchewan	A biohazard/laminar flow hood	11,000	Burton, D.W. Microbiology Manitoba	High performance liquid chromatography system * with P.C.Cloewen, I.Suzuki, P.L.Naeba (Manitoba)	25,000
McEwen, D.J. Inst Space/Aeros. Saskatchewan	Fabry perot interferometer * with J.M.R.Kochler, E.J.Illievellyn, A.R.Manson, R.Montalbetti, G.J.Sofko (Sask.)	70,300	Cahoon, J.R. Mechanical Eng. Manitoba	Research metallograph * with K.Tangri, M.Chaturvedi, W.Bassie (Manitoba)	24,153
Postlethwaite, J. Chemical Eng. Saskatchewan	Computer-assisted electrochemical corrosion system	14,364	Card, M.C. Electrical Eng. Manitoba	Surface profiling system * with K.C.Kao (Manitoba)	28,310
Smart, C.C. Geography Saskatchewan	Fluorometer	11,655	Chaturvedi, M.C. Mechanical Eng. Manitoba	Scanning electron microscope * with M.W.Bassie, K.K.Tangri, J.B.Cahoon, Z.Lajtai, H.C.Card, J.A.Oleszkiewicz (Manitoba)	231,122
Steer, R.P. Chemistry Saskatchewan	Gas chromatograph and mass spectrometer data system * with P.J.Smith, R.G.Sutherland, J.A.Weil, J.M.Pepper, R.J.Woods, G.D.Abrams, C.C.Lee, W.L.Waltz (Sask.)	28,850	Dick, T.A. Zoology Manitoba	Refrigerated centrifuge * with J.G.Eales (Manitoba)	28,419
			Halden, M.W. Earth Sciences Manitoba	Petrographic microscope * with W.W.Last (Manitoba)	19,547

Huebner, P. Zoology Manitoba	Inverted microscope and camera	22,000	Blenkinsop, J. Geology Carleton	Addition of options to solid-source mass spectrometer * with K. Bell (Carleton)	23,270
Jamieson, J.C. Chemistry Manitoba	Preparative ultracentrifuge and one rotor * with H.W. Duckworth (Manitoba)	46,000	Chakrabarti, C.L. Chemistry Carleton	Zeeman atomic absorption spectrophotometer * with B.R. Hollibone, D.C. Wigfield (Carleton)	120,125
Kao, K.C. Electrical Eng. Manitoba	Plasma monitor system * with H.C. Card (Manitoba)	45,147	Harrison, R.G. Electronics Carleton	Microwave spectrum analyser * with B.A. Syrett, J.S. Slight (Carleton)	52,990
Larter, E.W. Plant Science Manitoba	Near-infrared reflectance spectrophotometer * with I.E. Evans, P.P. McVeity, B.R. Stefansson, R.W. Clark (Manitoba)	25,694	Iyer, M.W. Biology Carleton	Dual column gas chromatograph with head-space sampler	24,000
Marquardt, R.P. Animal Science Manitoba	High performance liquid chromatographic system * with I.D. Campbell, W. Guenter, J.R. Ingalls, G.D. Phillips, S.C. Stothers (Manitoba)	59,360	Joy, K.W. Biology Carleton	High performance liquid chromatograph for amino acid analysis * with R.J. Ireland (Carleton)	49,200
Moon, W. Earth Sciences Manitoba	Interactive graphics and image processing system * with D.H. Hall, W.C. Brisbin, D.T. Anderson, L.P. Stene, M.E. Davison, P.C. Hawthorne, J.D. Milton, R.B. Ferguson, L. Sharai (Manitoba)	242,592	Koningstein, J.A. Chemistry Carleton	Continuous wave argon ion laser for micro-raman spectroscopy * with D.P. Miles, L.V. Haley (Carleton)	32,065
Morrish, A.W. Physics Manitoba	Transmission electron microscope with low field specimen stage * with P. Gaunt, C.W. Searle (Manitoba)	205,025	McIntyre, D.C. Psychology Carleton	1) Optical microscope with photomicrography equipment 2) Ultra deep freeze * with J.A. Webb (Carleton)	47,250
Muir, W.F. Agric. Eng. Manitoba	Laboratory chamber with instrumentation for crop drying and wetting	24,200	Menipaz, E. School of Business Carleton	Kindred neurons in vitro	24,020
Tangri, K. Mechanical Eng. Manitoba	Image analyser * with J.R. Cahoon, M.C. Chaturvedi, H.W. Bassin (Manitoba)	123,317	Pettusic, M.W. Psychology Carleton	Expandable Computer Aided Testing and Quality Management graphic display apparatus	29,997
Van Oers, M.T.H. Physics Manitoba	Tape drive and controller * with W.E. Davison, B.R. Falt, P.H. McCamis (Manitoba)	34,312	Setterfield, G. Biology Carleton	Laboratory microprocessor system	14,570
Williams, G. Physics Manitoba	Cerium Magnesium Nitrate (CMN) thermometer * with R.M. Rosko (Manitoba)	26,030	Woodside, C.H. Sys Eng/Comp Sci. Carleton	Twin objective lens advanced research electron microscope * with D.I. Brown (Ottawa), P.E. Lee, M.E. McCully, R.W. Seagull (Carleton)	260,000
Loeb, S.J. Chemistry Winnipeg	Inert atmosphere dry box	18,800	Bogart, J.P. Zoology Guelph	CAD support equipment * with B.J.A. Bubz, H.A. Cope land, H.H. Holtz, J. Goldak (Carleton)	73,676
Manocha, R.S. Biolog. Sciences Brock	Ultramicrotome * with J. Bossant, A.H. Houston, R.P. Rand (Brock)	21,999	Boutin, S.A. Zoology Guelph	Ultra-cold freezer for tissue storage	7,000
Ogilvie, R.D. Psychology Brock	Real-time experimental control system * with S.J. Segalowitz, J.O. Rittner (Brock)	12,757	Campbell, J.L. Physics Guelph	Wildlife radio telemetry equipment	17,274
Bauer, G.P. Civil Engineering Carleton	Multi-purpose shallow depth exploration drill	23,933	Cocivera, M. Chemistry Guelph	Lithium-drifted silicon energy-dispersive X-ray spectrometers	21,505
Bell, R. Mech. & Aeronaut. Carleton	Fatigue crack growth monitoring equipment * with J. Kirkhope (Carleton)	29,320	Egelstaff, P.A. Physics Guelph	Equipment to study physical and electrochemical properties of semiconductors	34,202
				Detectors and source for gamma-ray diffractometer	40,171

Prinson, G. Chemistry Guelph	Equipment to update an X-ray diffractometer system * with E.C. Alyea, H.C. Clark, R. McCrindle (Guelph)	55,000	Walton, J.S. Agricultural/Poultry Sc- Guelph	Liquid scintillation spectrometer * with R.J. Etches, R.B. Hacker, G.J. King (Guelph)	20,181
Pitandaro, M.A. Pathology Guelph	Automatic ultramicrotome * with J.B. Geraci, D.H. Percy, T.J. Huiland, H.W. Peterson (Guelph)	24,725	Wilson, J.D. Land Resource Sc Guelph	Anemometers	47,000
Porter, C.W. Microbiology Guelph	High pressure liquid chromatograph * with T.J. Beveridge, L.M. Gibbins, R.L.C. Lo, R.H.W. Stevenson (Guelph)	25,000	Woo, P.T.K. Zoology Guelph	Research microscope	16,264
Robbins, A.M. Biological Sciences Guelph	High performance UV VIS spectrophotometer * with J.L. Raesside, M.H. Paulling, G.A. Robinson, M.T. Goldberg, R.J. Boermans (Guelph)	38,000	Wood, J.M. Chemistry & Biochem Guelph	Airfuge * with P.J. Sharom (Guelph)	14,000
Gray, C.G. Physics Guelph	Memory upgrade for the array processor * with P.A. Egelsstaff, S. Goldman, P.R. Mallett, J. Law, G.G. Nickel, J.D. Poil, W.R. Smith, A.R. Sooper, D.E. Sullivan (Guelph), J. Leech (Waterloo)	57,570	Eigenbrod, K.D. Civil Engineering Lakehead	3 total pressure cells, 3 pressure tech type pore pressure cells, 1 polycorder, 1 biaxial slope indicator and readout * with G. Locker, T. Wasniowski (Lakehead)	28,900
Joseph, P.D. Chemistry Guelph	Upgrade of high pressure liquid chromatography system	18,050	Malek, L. Biology Lakehead	Liquid scintillation counter	21,969
Kesteven, R.A.B. Chemistry & Biochem Guelph	Spectrophotometer * with J.M. Wood (Guelph)	38,000	Walker, S. Chemistry Lakehead	Impedance analyser equipment	28,759
Lipkowitz, J. Chemistry Guelph	Lead and auger spectroscopy	102,000	Beswick, A.B. Geology Laurentian	Upgrading of memory and storage capacities for minicomputer * with P. Copper, J.P. Davies, D.G. Floung, R.S. James, D.H. Russell, R.S. Whitehead (Laurentian)	19,946
McClindie, R. Chemistry Guelph	High-pressure liquid chromatography unit * with G.L. Lange, M.J. Nye (Guelph)	12,285	Bader, R.P.W. Chemistry McMaster	300 MB disc drive	19,500
Nazer, R.W. Botany & Genetics Guelph	High vacuum E.M. coating unit * with B.C. Lu, D.H. Lynn, J.P. Phillips, J.E. Robb, B.M. Sells (Guelph)	23,000	Ballik, R.A. Exp. Physics McMaster	Transient waveform digitizer	48,090
Parkin, K.L. Food Science Guelph	Ultracentrifuge * with D.W. Stanley (Guelph)	48,973	Childs, R.P. Chemistry McMaster	Low temperature drier * with C.J.L. Lock, M.J. McGlinchey (McMaster)	43,164
Peterson, P.I. Botany & Genetics Guelph	Transmission electron microscope with scanning attachment and energy dispersive spectrometer * with J. Robb, B.C. Lu, D. Lynn (Guelph)	178,140	Dokainish, M. Mechanical Eng. McMaster	Micro computer system	31,308
Proctor, J.T.A. Horticulture Guelph	Portable photosynthesis system * with D.P. Okarod, M.J. Tsujita, J.L. Eggen, J.E. Laing (Guelph)	19,212	Eaton, D.R. Chemistry McMaster	High field NMR spectrometer * with G.J. Schrobilgen, T. Bitchell, R.J. Gillespie, R.A. Bell, T. Neilson, C.J.L. Lock, M.J. McGlinchey, I.D. Spenser, R.P. Childs, D.B. Maclean, A.E. Masielec (McMaster)	274,025
Protz, P. Land Resource Sc Guelph	Automated rock section production system	23,490	Elearathy, H.A. Mechanical Eng. McMaster	A mini-computer and peripherals * with W.R. Neucombe (McMaster)	84,932
Pennington, G.W. Physics Guelph	Microcomputer-based signal processor	12,000	Ford, D.C. Geography McMaster	Multichannel analyser with multi-plexer router and alpha spectrometers - for U- series analyses * with H.P. Schwartz (McMaster)	26,463
Stevens, G.D. Zoology Guelph	Oscilloscope and gas mixing pump	31,553	Galef, B.G. Psychology McMaster	Closed circuit television	8,699
Swatland, H.J. Animal/Poultry Sc. Guelph	Filter optic spectrophotometer * with D.W. Stanley (Guelph)	26,941			

Haykin, S. Elec. & Comp. Eng. McMaster	Image digitizer	49,653	Georganas, M. Electrical Eng. Ottawa	Multipurpose microprocessor development system * with D.T.Gibbons, S.S.Stuchly, A.Saith, K.H.Chiang, M.Goldberg, W.Steenart, B.Krieger (Ottawa)	78,268
Irons, G.A. Metal/Mat. Science McMaster	Optical emission spectrometer * with J.S.Kirkaldy, D.A.R.Kay, W.K.Lu, J.D.Ebbury (McMaster)	220,970	Hickey, D.A. Biology Ottawa	Preparative centrifuge	17,000
James, W. Civil Engineering McMaster	Distributed processing system for real time control of diffuse water pollution in urban and industrial areas * with J.J.Drake, G.G.Patt (McMaster)	87,100	Hornof, V. Chemical Eng. Ottawa	Equipment for flooding experiments on reservoir cores * with G.Meale (Ottawa)	25,500
Kershaw, K.A. Biology McMaster	High-speed refrigerated centrifuge	18,156	Keddy, P.A. Biology Ottawa	Research van	16,550
Leigh, W.J. Chemistry McMaster	Excimer laser	53,420	Lu, B.C.Y. Chemical Eng. Ottawa	Supercritical fluid chromatograph	52,208
Macgregor, J.P. Chemical Eng. McMaster	Gas chromatograph with liquid sampling loop for on-line applications * with A.E.Hamielec (McMaster)	24,412	Manoogian, A. Physics Ottawa	Magnet and power supply * with D.D.Hogarth, B.S.Mann, J.C.Woolley (Ottawa)	27,495
Maurer, D.J. Psychology McMaster	Photometer	8,055	Perry, S.P. Biology Ottawa	Three precision gas mixing pumps * with P.J.Walsh (Ottawa)	10,000
McNutt, R.H. Geology McMaster	Solid source mass spectrometer * with J.R.Crocket (McMaster)	275,000	Aitken, G.J.H. Electrical Eng. Queen's	Thermoplastic real-time camera	16,590
Nicholson, P.S. Metal/Mat. Science McMaster	Equipment for non-destructive evaluation and stem examination of ceramic superionic conductors * with G.R.Piercy, J.D.Ebbury (McMaster)	53,575	Archibald, J.P. Mining Eng. Queen's	Cold environment laboratory * with J.H.Wantel, J.A.Besch (Queen's)	30,000
Swaltzer, W.H. Metal/Mat. Science McMaster	Thin metal film vacuum evaporator * with D.A.Thompson (McMaster)	11,730	Baird, M.C. Chemistry Queen's	Inert atmosphere glove box	36,350
Thompson, D.A. Eng. Physics McMaster	Cryo-refrigerator for low temperature ion implantations	22,171	Bosg, P.T. Biology Queen's	Digital sonograph and sound recording equipment * with R.D.Montgomerie (Queen's)	24,023
Wright, J.D. Chemical Eng. McMaster	Extractive distillation/energy integrated systems * with P.A.Taylor (McMaster)	59,725	Cartledge, J.C. Electrical Eng. Queen's	Instrumentation for fiber optic transmission, microprocessor design and VISI * with H.T.Mouftah (Queen's)	50,694
Conway, B.E. Chemistry Ottawa	Fourier transform infrared spectrometer * with B.A.Morrov (Ottawa)	101,500	Dennis, D.T. Biology Queen's	Pharmacia fast protein liquid chromatograph (FPLC)	20,888
Detellier, C. Chimie Ottawa	Simulateur du spectre solaire * avec J.M.J.Pr�chet (Ottawa)	11,718	Erb, U. Metallurgical Eng. Queen's	Energy dispersive X-ray spectrometer * with J.T.W.Atkinson, C.A.Pickles, R.W.Smith, H.Sayer (Queen's)	55,750
Droste, R.L. Civil Engineering Ottawa	Gas chromatograph	42,153	Keast, J.A. Biology Queen's	Flow-through, controlled temperature circulation system * with P.G.Colegan, P.H.Johansen (Queen's), W.C.Collins (Toronto), M.P.Gross (SPU)	32,204
Fortin, E. Physics Ottawa	Digital data acquisition system * avec M.A.R.Febblanc, P.Bernard (Ottawa)	39,207	Leslie, J.B. Physics Queen's	Ultra high vacuum scattering chamber and precision goniometer * with G.T.Ewan, H.W.Love, J.D.MacArthur, P.J.Scanlon (Queen's)	68,743
Pr�chet, J.M.J. Chemistry Ottawa	Thermal analysis system	27,200	McLane, P.J. Electrical Eng. Queen's	A microcomputer based signal processing and program development system * with S.R.Tavares, P.H.Witte (Queen's)	9,650

Meech, J. A. Mining Eng. Queen's	Scanning UV spectrophotometer and atomic absorption spectrophotometer * with J. G. Paterson, J. H. Brown (Queen's)	58,000	Denkler, N. G. Botany Toronto	Orthoplan research microscope	25,634
Pattee, T. H. Geology Queen's	Advanced laser laboratory * with A. H. Clark, P. L. Roeder (Queen's)	69,715	Drummond, J. R. Physics Toronto	University of Toronto Balloon Radiometer	31,200
Pollard, A. Mechanical Eng. Queen's	General purpose data acquisition system for laser doppler anemometry and hot wire anemometry * with R. A. Becker, Z. W. Grandmaison (Queen's)	21,464	Govind, C. K. Zoology Toronto	Microtome cryostat	9,363
Poder, J. C. Micro/Immunology Queen's	Fluorescent microscope * with J. J. A. Holden, B. B. White, S. P. C. Cole (Queen's)	22,000	Guba, A. Zoology Toronto	Preparative ultracentrifuge and rotors	46,000
Sayer, M. Physics Queen's	Magnetron sputtering facility * with R. W. Smith (Queen's)	26,800	Guillet, J. P. Chemistry Toronto	Diode array spectrophotometer	24,728
Smith, V. H. Chemistry Queen's	Pourier transform infrared spectrometer * with M. C. Baird, Z. Buncel, A. R. Morris, R. Z. Russell, R. P. Shurvel (Queen's)	89,835	Hansen, J. S. Aerospace Studies Toronto	100 KM material test system * with R. C. Tennyson (Toronto)	221,000
Szatek, W. A. Chemistry Queen's	Automatic polarimeter * with G. W. Hay (Queen's)	25,451	Havas, H. Environmental Stud. Toronto	Research microscope, stereoscopic zoom microscope and photomicrographic equipment	20,852
Taylor, D. R. Physics Queen's	Dilution refrigerator system for neutron scattering * with R. L. Mastrom, R. P. Collins, J. P. Harrison, J. H. Page (Queen's)	206,660	Hubbs, M. Forestry Toronto	Deep freezer * with R. S. Jang (Toronto)	13,000
Von Graw, M. W. Psychology Queen's	Equipment for electrical and microiontophoretic stimulation, and single unit recording	14,889	Hughes, P. C. Aerospace Studies Toronto	Front end processor	16,226
White, B. W. Biology Queen's	Centrifuge and rotors * with G. R. Wyatt, L. Aujame, J. J. A. Holden, V. K. Walker (Queen's)	17,000	Hutchinson, F. C. Botany Toronto	Coulter counter	11,340
Young, P. G. Biology Queen's	High speed centrifuge * with D. T. Dennis (Queen's)	17,000	Joy, M. L. G. Bio-Med Eng. Toronto	Computing facility: upgrade * with R. S. C. Cobbold, R. C. Frecker, R. Konov, H. O. Belrne, R. B. Worvich, R. Zingg, I. A. Sharnah, A. N. Venetsanopoulos (Toronto)	49,634
Anderson, G. H. Nutritional Sci. Toronto	Ultracentrifuge with two rotors * with C. Z. Lepron, D. J. A. Jenkins (Toronto)	44,971	Keffer, J. P. Mechanical Eng. Toronto	Digital data acquisition system	48,115
Andrews, D. P. Medicine Toronto	Statistical computing laboratory * with P. M. J. Corey (Toronto)	15,000	Kenney-Wallace, G. A. Chemistry Toronto	Laser system	55,000
Atwood, M. L. Physiology Toronto	Magnetic tape recorder for data acquisition	14,216	King, J. D. Physics Toronto	A powerful ion source for low binding energy negative ions * with A. Z. Litherland, J. C. Rucklidge (Toronto)	32,000
Curran, J. M. Civil Engineering Toronto	High performance graphics workstation	29,708	Mackay, D. Chemical Eng. Toronto	Liquid chromatograph components	14,541
Cwynar, I. Botany Toronto	Research microscopes	18,915	May, A. D. Physics Toronto	Raman gain spectrometer	20,505
Donnan, H. Psychology Toronto	Equipment for tracking, filming, and recording eye movements * with M. Noskovich, P. I. M. Craik (Toronto)	19,727	Measures, P. Aerospace Studies Toronto	High speed data acquisition system	22,535

Molle, M.L. Computer Science Toronto	122,585	CSRG computing facility upgrade * with D.B.Mortman, E.C.F. Hehner, R.C. Sevcik, A.O. Mendelson, J. Nylopoulos (Toronto)	Valleau, J.P. Chemistry Toronto	Mini-computer for theoretical chemistry calculations * with P.W. Gruen, J.G. Csizsadia, R. Kapral, R.A. Poirier, S.G. Whittington (Toronto)	275,000
Peltier, W.R. Physics Toronto	201,570	NV10,000 minicomputer for climatology and geophysical fluid dynamics * with H.R. Cho, J.R. Drummond, C.A. Illin, R. Ilist (Toronto)	Weatherly, G. Metal/Mat. Science Toronto	Transmission electron microscope * with B. Ramaswami, K.T. Aust (Toronto)	273,335
Pilliar, R. Metal/Mat. Science Toronto	15,000	Controlled atmosphere vertical tube furnace * with G.C. Weatherly (Toronto)	Westgate, J.A. Geology Toronto	Magnetic susceptibility and anisotropy equipment * with N. Eyles (Toronto)	7,846
Plowright, R.C. Zoology Toronto	8,416	Fluorescence microscope and accessories	Wicks, P.J. Geology Toronto	Thermoanalysis with evolved gas analysis	12,907
Polanyi, J.C. Chemistry Toronto	125,000	Laser facility for the UV and VUV	Woodhams, B.T. Chemical Eng. Toronto	Plastics compounding machine (laboratory model)	55,000
Reisz, R.P. Zoology Toronto	17,068	Photographic and darkroom equipment	Yates, K. Chemistry Toronto	Electric field spectrometer	37,443
Reynolds, W.P. Chemistry Toronto	275,000	High field multinuclear NMR spectrometer * with B. Bosnich, A.G. Brook, D.H. Parrar, J.B. Jones, G.A. Kenney-Wallace, R.H. Kluger, A.J. Kresge, R.A. McClelland, S. McLean, R.H. Morris, J. Powell, T.T. Tidwell, P. Yates (Toronto)	Yates, P. Chemistry Toronto	Fused silica capillary column gas chromatograph * with B. Bosnich, A.G. Brook, J.B. Jones, S. McLean (Toronto)	24,825
Ristic, V. Electrical Eng. Toronto	24,501	Ion milling and sputtering system	Pousson, J.N. Zoology Toronto	Freeze etch unit * with C.K. Govind (Toronto)	83,125
Salama, C.A.T. Electrical Eng. Toronto	112,300	Pattern generator for microelectronics technology	Zaky, S.G. Electrical Eng. Toronto	VLSI design station * with V.C. Hamacher, B.M. Loucks, W.M. Snelgrove, Z.G. Vranasic (Toronto)	15,349
Schneider, R.H. Psychology Toronto	16,511	Programmable filters for hearing experiments	Evans, R.D. Environmental Stud. Trent	Flameless atomic absorption spectrophotometer with data acquisition system * with D.C. Laseby (Trent)	34,724
Spoohar, P.T.C. Geology Toronto	19,250	A gas chromatograph * with G.H. Anderson, K.W.P. Howard, S.D. Scott (Toronto)	Oldham, R.B. Chemistry Trent	Components to enhance electrochemical data- acquisition system	19,837
Stesky, R.M. Earth/Planet. Sci. Toronto	12,193	Digital oscilloscope	Slavin, R.J. Physics Trent	Ultrahigh vacuum equipment upgrade: Mass spectrometer and isolation valve	10,810
Straus, M.A. Botany Toronto	46,000	Preparative ultracentrifuge and rotors * with J.P. Williams, J.R. Coleman, J.A. Hellebusat, R.A. Collins (Toronto)	Beatty, J.C. Computer Science Waterloo	Interactive computer graphics * with R.H. Bartels, K.S. Booth, D.E. Field (Waterloo)	86,114
Sullivan, P.A. Aerospace Studies Toronto	12,620	A computer based digital data acquisition system	Bols, W.C. Biology Waterloo	Inverted phase microscope with accessories * with C.A. Peterson, W.D. Taylor (Waterloo)	12,750
Tobe, S.S. Zoology Toronto	36,069	Liquid scintillation spectrometer * with D.P. Mettrick, P.M. Barrett (Toronto)	Bryden, M.P. Psychology Waterloo	Laboratory computer system * with P.H. Herikie, D.L. Wahlsten (Waterloo)	25,637
Toquai, J.H. Metal/Mat. Science Toronto	33,800	Recording camera: High resolution TV system 6 used X-ray tube (high temperature X-ray radiography)	Burtowski, P.J. Computer Science Waterloo	Computer aided design system * with J.D. Dymant, M.A. Malcolm, M.S. Ostlund (Waterloo)	93,094
Tyree, M.T. Botany Toronto	25,552	Equipment for acoustic detection of cavitation in the sapwood of trees * with T.J. Blake (Toronto)	Beyerley, J.J. Chemical Eng. Waterloo	Ion Chromatograph * with G.L. Rempel, G.P. Atkinson (Waterloo)	29,258

Carty, A. J. Chemistry Waterloo	30,400	Infrared spectrometer * with G.I. Daitrienko, P.T. Ho, D.A. Holden, D. Mackay, G.L. Reapel, A. Rudin, R.G.A. Rodrigo, J.G. Smith, V.A. Snieckus, M.P. Tchit, T. Viswanatha (Waterloo)	Wasson, P. Mechanical Eng. Waterloo	Modification to quantitative capabilities of ED microprobe system * with H.W. Kerr, A. Plunzke (Waterloo)	27,795
Chamberlain, S.G. Electrical Eng. Waterloo	90,568	Mask aligner for the silicon devices and integrated circuits laboratory * with E.L. Hassell, D.J. Rouliston, M.I. Elmasry (Waterloo)	Rudin, A. Chemical Eng. Waterloo	Mechanical spectrometer * with K.P.O'Driscoll (Waterloo)	266,375
Chatzis, I. Chemical Eng. Waterloo	19,477	Gas chromatograph * with P.A.L. Dullien, I.P. MacDonald (Waterloo)	Scoles, G. Chemistry Waterloo	Combined atomic beam, photoelectron and photodesorption spectrometer for chemical dynamics studies of molecular overlayers * with T.E. Gough, J.W. Hepburn, M.R. Isenor (Waterloo)	270,000
Daitrienko, G.I. Chemistry Waterloo	25,732	Ultraviolet/visible spectrophotometer * with P.T. Ho, D.A. Holden, R.G.A. Rodrigo, J.G. Smith, V.A. Snieckus, D. Mackay (Waterloo)	Scott, D.S. Chemical Eng. Waterloo	Gas chromatograph - mass spectrometer * with H. Moo-Young, C.W. Robinson, R.R. Hudgins (Waterloo)	110,627
Dubroff, E.B. Biology Waterloo	8,134	Portable steady state porometer	Sykes, J.P. Civil Engineering Waterloo	Computer-aided design workstation * with E.A. McBean (Waterloo)	74,310
Frape, S.V. Earth Sciences Waterloo	19,635	Variable temperature-pressure rock-water interaction cell * with M.B. Dusseault, P. Fritz (Waterloo)	Thompson, J.Z. Biology Waterloo	Balzers freeze fracture equipment * with M. Bolls, J.R. Lepock (Waterloo)	89,005
Fitz, P. Earth Sciences Waterloo	85,515	Liquid scintillation counter * with A.V. Morgan, P.P. Morrow, S.K. Frape, J.P. Barker, R.A. Morgan (Waterloo)	Viswanatha, T. Chemistry-Biology Waterloo	Environmentally controlled incubator	19,189
Gough, T.E. Chemistry Waterloo	34,368	R.F. generator and amplifiers for IB RF molecular beam double resonance experiments	Wynnycky, J.P. Chemical Eng. Waterloo	Mercury penetration porosimetry instrument * with I. Chatzis, P.A.L. Dullien, D.R. Spink, P.I. Silveston (Waterloo)	60,340
Hassell, E.L. Electrical Eng. Waterloo	46,400	Silicon dicing saw * with D.J. Rouliston, S.G. Chamberlain, R.I. Elmasry (Waterloo)	Peterson, D.B. Biology Wilfrid Laurier	Autoanalyzer II continuous-flow analytical system * with J.R. Elliott (Waterloo)	33,435
Hoffman-Goetz, L. Human Kinetics Waterloo	23,000	Beta scintillation counter for interdisciplinary research * with D.E. Mills, R.E. Houston (Waterloo)	Base, T.E. Mechanical Eng. Western Ontario	Laser velocimetry system * with R.E. Baddour, R.A. Bergougnou, I. Iaculet, A. Margaritis, J.D. Parasak (UWO)	30,475
Holden, D.A. Chemistry Waterloo	76,150	Fluorescence lifetime instrumentation * with E. Hetherington, J. Dunn, J. Cochrane, P.B. Hallatt, P. Ellenkessel, P.J. Shatto (Guelph), J.B. Lepock, J.E. Thompson (Waterloo)	Bergougnou, M.A. Chemical Eng. Western Ontario	Dedicated equipment for the instrumentation of a large fluidization column simulator	32,678
Hudgins, R.B. Chemical Eng. Waterloo	12,725	Catalytic reactor	Cain, D.P. Psychology Western Ontario	Single neuron recording laboratory for kindling	24,707
Hughson, R.L. Kinesiology Waterloo	8,492	Computer based physiological recorder	Huner, M.P.A. Plant Science Western Ontario	Ultracut Z * with A.W. Day (UWO)	24,366
Hul, W.H. Applied Math. Waterloo	23,432	Microprocessor for symbolic computations * with G. Tsati (Waterloo)	Kerrich, R. Geology Western Ontario	Hydrogen-deuterium system * with R.W. Hodder, M.S. Pyfe, H.W. Nesbitt, W.D. MacRae, S.B. Hicock, B.I. Kronberg (UWO)	40,000
Irish, D.P. Chemistry Waterloo	24,450	Potentostat	Kidder, G.M. Zoology Western Ontario	Ultracentrifuge rotors * with B.G. Atkinson, J.E. Steele, J.P. Wiebe (UWO)	17,000
Mills, D.P. Human Kinetics Waterloo	33,372	Gamma radiation counter * with H.J. Green, L. Hoffman-Goetz (Waterloo)	Lachance, M.A. Plant Science Western Ontario	Refrigerated high speed centrifuge * with L.M. Brown (UWO)	17,000
			Landstreet, J.D. Astronomy Western Ontario	Detector head and disk unit	38,271

MacNeill, I.B. Stat. & Actuar. Sc Western Ontario	High resolution display terminal and accompanying hardcopy unit * with A.Donner, G.A.Wells, D.R.Bellhouse, B.Chan, A.I.McLeod (UWO)	14,884	Yasuchi, H. Eng Materials Windsor	Ancillary equipment to sputtering-deposition system	47,104
Novak, M. Civil Engineering Western Ontario	Zonic system FFT analyzer	39,217	Behne, D.K. Chemistry York	New components for SIFT and TAPA studies of ion reactions with compounds of higher molecular weight and lower vapour pressure	7,748
Petersen, M.O. Chemistry Western Ontario	2M argon ion laser tube for a fluorescence correlation spectroscopy system	12,000	Davey, K.G. Biology York	Scintillation counter with spectraview display * with B.G.Loughton, C.H.Steel, R.A.Webb, A.S.M.Saleuddin (York)	27,625
Quigley, R.M. Civil Engineering Western Ontario	Data logging equipment to interface between dedicated hydraulic conductivity measuring system for clays and computer graphics facility	22,000	Duley, W.M. Physics York	Ring dye laser system	72,285
Roberts, W.A. Psychology Western Ontario	Computer hardware and interfacing equipment	10,271	Forst, A. Biology York	Video system for light microscopy	8,250
Schultz, P.J. Physics Western Ontario	Acquisition and analysis system for slow positron beam	98,944	Hayres, P.H. Biology York	Large volume preparative refrigerated centrifuge including centrifugal elutriation apparatus	30,000
Stillman, H.J. Chemistry Western Ontario	Circular dichroism spectrometer for bioinorganic research * with C.J.Willis (UWO)	111,882	Howard, I.P. Psychology York	Eye-movement recording equipment * with H.Ono, H.J.Steinbach (York)	20,000
Ware, W.P. Chemistry Western Ontario	Cavity dumper for laser facility * with J.N.Bolton (UWO)	30,000	Kochler, R.A. Physics York	Optics and support	11,300
Drake, J.E. Chemistry Windsor	Raman spectrometer * with D.E.Stephan, D.Gluck, A.C.Rueffelt (Windsor)	120,000	McQueen, D.J. Biology York	Four enclosures for limnology experiments	29,459
Hackam, P. Electrical Eng. Windsor	200 kW lightning and switching impulse generator * with G.R.G.Raju, A.Watson (Windsor)	60,884	Pearlman, R.E. Biology York	Refrigerated centrifuge with rotors * with A.S.Tsang, H.M.Creer, B.Glickman (York)	17,000
Hebert, P.D.N. Biology Windsor	Photomicroscope with photometer * with A.H.Warner, D.G.Wallen, D.S.Thomas, I.M.Weis (Windsor)	46,666	Shepherd, G.G. Physics York	Polarizing wide angle michelson interferometer	12,700
Julien, G.A. Electrical Eng. Windsor	Digital signal processing facility * with M.Ahadi, M.K.Ish, W.C.Miller, H.Shridhar, H.A.Sid-Ahmed, J.J.Soltis (Windsor)	180,000	Wu, C.Y. Computer Science York	Colour graphic terminal	28,728
Rankin, G.W. Mechanical Eng. Windsor	Constant temperature anemometer * with K.Sridhar (Windsor)	26,860	Pournier, H. Sciences biolog. Québec-Montréal	Centrifugation, microscope, compteur cellulaire * avec R.Krystyniak (UQAM)	13,000
Seif, Z.P. Mechanical Eng. Windsor	Automatic preventive maintenance and tool wear monitoring	78,202	Pomerleau, A. Psychologie Québec-Montréal	Système intégré de contrôle expérimental en temps réel, d'acquisition et de traitement des données * avec G.Malcuit (UQAM)	16,080
Taylor, N.F. Chemistry Windsor	High performance liquid chromatography system * with B.Matus, K.E.Taylor, R.J.Thibert (Windsor)	23,050	Pochon, P.D. Chimie Québec-Montréal	Poutier transform infraroud spectrometer * avec G.Delaas-Patterson, D.Vocelle, B.Helanson, P.C.Kong (UQAM)	45,000
Turek, A. Geology Windsor	Mass spectrometer components * with D.T.A.Syons (Windsor)	30,426	Charette, A. Sc. appliquées Québec-Chicoutimi	Banc d'essai pour mesures thermogravimétriques sur des électrodes de carbone * avec R.T.Bui (UQAC)	30,501
Turek, A. Geology Windsor	Mineral separation equipment * with D.T.A.Syons (Windsor)	14,098	Drutz, J.A. Sc. appliquées Québec-Chicoutimi	Amplificateur-conditionneur de signal modulaire à 4 canaux pour capteurs (4 auges et transducteurs) * avec P.Ducobert (UQAC)	12,235
Wool, G.W. Chemistry Windsor	Fast atom bombardment ion source and power supply	41,388	Powler, A.D. Sc. appliquées Québec-Chicoutimi	High - resolution - Y-ray - spectrometer & computer * avec E.Diaroth, J.Caignan, E.H.M.Chown, J.Guha, G.Houssou (UQAC)	41,319

D'On, J.L. Ingénierie Qué.-Trois-Riv.	Système de traitement d'image • avec A.Jacob (UQTR)	26,868	Fortin, M. Mathématiques Laval	Terraineux d'ordinateur • avec P.Pierre (Laval)	18,732
Kotia, R.P. Pâtes et papiers Qué.-Trois-Riv.	Microreacteur • avec C.Daneault (UQTR)	8,625	Ghali, P. Mines & métallurgie Laval	Appareil de traction à taux de déformation constante • avec J.P.A.Gallibois, M.R.Krishnadev (Laval)	10,028
Leblanc, R.M. Photobiophysique Qué.-Trois-Riv.	Spectrophotométrie et spectrofluorimétrie de pigments biologiques en monocouche à l'interface air-eau	43,500	Godin, C. Biochimie Laval	High performance liquid chromatography system • avec J.Lapointe, M.Lavoie, P.H.Roy (Laval)	25,000
Lo, S.H. Pulp & paper Qué.-Trois-Riv.	Permetteur labroform	40,928	Guderiev, H. Biologie Laval	Scintillation counter • with D.Pallotta, J.Laroche (Laval)	23,800
Paqapalan, V. Génie électrique Qué.-Trois-Riv.	Analyseur d'onde par transformée rapide de Fourier • avec A.Jacob, A.Savigny (UQTR)	24,666	Hernan, J.A. Chimie Laval	Boscar integrator	16,328
ward, R.M. Psychologie Qué.-Trois-Riv.	Microscope à dissection et accessoires	8,927	Hösl, J.P. Zool./Anat. des bois Laval	Enzyme immunoassay microplate reader pour la détection et l'identification de champignons hémomyces destructeurs de bois	18,000
Sundby, B. Océanographie Québec-Nioudski	Liquid scintillation counter	49,305	LeDuy, A. Génie chimique Laval	Shaker rotatif pour fermentation • avec L.Chopin (Laval)	17,610
Antoun, H. Sols Laval	Stérilisateur à vapeur • avec S.A.Wisser (Laval)	23,000	Legendre, L. Biologie Laval	Spectroradiomètre sous-marin	25,663
Arseneault, H.H. Physique Laval	Interactive digital image processor and accessoires • avec R.B.Bessard, P.P.Borra, E.J.Hatoy (Laval)	150,360	Lessard, R.A. Physique Laval	Laser à l'argon	115,000
Barbier, G.H. Mines & métallurgie Laval	Spectrophotomètre UV-visible • avec E.Ghali (Laval)	41,975	Leupin, H. Photogrammétrie Laval	Restituteur analytique (Analytical plotter) • avec S.R.Chosh (Laval)	213,200
Casré, C. Pédologie/écologie Laval	Flow injection analyser • avec B.Berrier (Laval)	28,320	Locat, J.P. Géologie Laval	Viscosimètre à double pérois cylindriques	24,606
Cardinal, A. Biologie Laval	Microscope de recherche à contraste de phase et à épifluorescence	22,209	Payette, S. Etudes nordiques Laval	Un camion • avec L.Fillion, M.Allard (Laval)	21,997
Chenevert, R.B. Chimie Laval	Spectromètre de résonance magnétique nucléaire multi-noyaux • avec R.H.Burnell, P.Canonne, C.P.Engel, P.Brassard, D.Cozak (Laval)	263,148	Pichon, M. Physique Laval	Laser CO 2 à 10 atmosphères • avec P.A.Bellanger, S.L.Chin (Laval)	62,048
Chopin, L. Génie chimique Laval	Captur 10g-cm pour option "fluides" d'un rhéomètre • avec A.Lebuy (Laval)	17,300	Poussart, D. Génie électrique Laval	Système pour études en acquisition, traitement et reconnaissance d'objets tri- dimensionnels • avec S.Gagne (Laval)	32,800
Dhatt, G. Génie civil Laval	Outils informatiques: un micro-processeur à 32 bits et un écran graphique	59,372	Pogers, P. Physical Education Laval	IRB liquid scintillation spectrometry system • with C.Bouchard, P.T.Dionne (Laval)	23,800
Dort, F.Y. Psychologie Laval	Système vidéoscopique	4,500	Savoie, R. Chimie Laval	Détecteur infrarouge • avec M.Pézolet, R.E.Pruitt (Laval)	9,939
Fiset, M. Mines & métallurgie Laval	Appareils à courant de Foucault par balayage en fréquences • avec E.Ghali (Laval)	40,300	Szoghly, I.M. Physique Laval	Prototype solid state detector system • avec J.C.Roy, J.A.Zee, S.Halliquine (Laval)	25,000

Trebley, R. Physique Laval	Système de pulvérisation par faisceaux ioniques * avec C.Delisle (Laval)	89,064	Gruzleski, J.E. Mining/Metal. Eng. McGill	Induction furnace unit * with R.I.L.Guthrie, S.A.Argyropoulos, R.Harris, P.Mucciardi (McGill)	61,076
Weatherston, I. Biology Laval	Dual, capillary & packed column gas chromatographic system	30,000	Ingram, R.G. Oceanography McGill	Conductivity-temperature-depth profiling instrument	31,803
Saint-Jacques, R.G. INRS - Energie Québec - Varannes	Microscope électronique en transmission pour couplage avec un implanteur d'ions * avec B.Terrell (INRS)	60,000	Laplante, A.P. Mining/Metal. Eng. McGill	Gamma-ray detector * with J.A.Pinch (McGill)	8,411
Carignan, R. INRS-Eau Québec - INRS	Spectromètre alpha * avec J.R.Kraiser, M.Ouellet (INRS)	28,705	Lechowicz, M.J. Biology McGill	Portable system for field measurements of photosynthesis and respiration * with G.Bell, D.J.Schoen (McGill)	22,540
Drapeau, G. INRS-Océanolog. Québec - INRS	Courantomètre électromagnétique avec module interne	9,619	Marley, A.A.J. Psychology McGill	Computer modelling in psychophysics * with D.J.Ostry (McGill)	23,127
Gauvreau, D. INRS-Santé Québec - INRS	Système de microscope inversé et système de microphotographie * avec S.Cooper, R.Nasse, D.Piendeau (INRS)	15,831	Herrett, T.H. Computer Science McGill	Workstation for research into document processing	20,570
Terreault, R. INRS - Energie Québec - INRS	Aliment d'analyse en énergie et de sélection de masse * avec R.G.Saint-Jacques (INRS)	16,820	Newfeld, R.J. Chemical Eng. McGill	Permeator - laboratory scale * with D.G.Cooper, B.Volesky (McGill)	21,706
Terreault, B. INRS - Energie Québec - INRS	Analyseur 2 x B	8,750	Paige, C.C. Computer Science McGill	Floating point accelerator and additional memory for computer * with D.Avis (McGill)	24,933
Avis, D. Computer Science McGill	Disk drive * with W.R.Mahavji, C.C.Paige (McGill)	13,254	Pasztor, V. Biology McGill	Digital storage oscilloscope and plotter	20,834
Bailly, B.R. Mechanical Eng. McGill	Programmable data acquisition and control system	11,130	Peterson, E.L. Biology McGill	Data acquisition system and microcomputer * with G.S.Pollack, V.H.Pasztor, F.H.Robertson, R.Chase (McGill)	21,676
Brown, G.G. Biology McGill	Ultracentrifuge and one rotor * with A.H.Busey, R.S.Phindra, S.P.Gibbs, C.Sapienza (McGill)	46,000	Petrides, H. Psychology McGill	Surgical microscope	15,021
Chin, J.B. Chemistry McGill	Stopped flow UV spectrophotometer (from donor)	32,700	Reiswig, R.M. Redpath Museum McGill	Stereomicroscope with camera	9,951
Cooper, D.G. Chemical Eng. McGill	Gas chromatograph	22,942	Robertson, R.M. Biology McGill	Electrophysiological waveform display and storage system	31,058
Crosley, D.J. Mining/Metal. Eng. McGill	Geophysical data analysis facility * with O.G.Jensen (McGill)	89,197	Povlands, M. Mining/Metal. Eng. McGill	Automated X-ray diffraction system * with J.A.Pinch, R.Williams, M.R.Kassal, R.J.Munz, R.W.Fong (McGill)	105,807
Donnay, G. Geological Sciences McGill	Updating of our obsolete automated X-ray diffractometer	43,818	Savage, S.B. Mining/App Mech McGill	System for acquisition and analysis of fluid flow data * with R.G.Cox, V.H.Chu (McGill)	13,081
Franklin, K.B.D. Psychology McGill	High-performance liquid chromatography system and support apparatus * with R.Weizack, R.H.White, R.H.Robertson (McGill)	20,181	Schoen, D.J. Biology McGill	An electrophoresis lab for population studies * with H.Tyson, M.J.Lechowicz, G.Bell (McGill)	17,243
Gehr, R. Civil Engineering McGill	Gel permeation liquid chromatograph	52,220	Sergent, J. Psychology McGill	Computer for on-line control of psychological experiments and preliminary computations of data	23,940

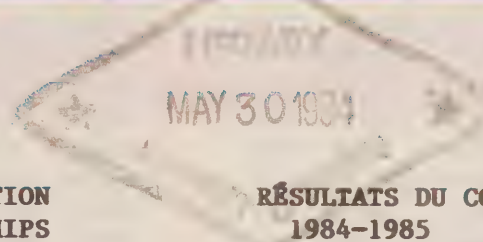
Shih, I. Electrical Eng. McGill	Temperature control/measurement system for bulk and thin film thinse2 preparation * with C.H. Champagne (McGill)	35,300	Sandorff, C. Chimie Montréal	Système de détection pour spectromètre raman avec laser ultraviolet * avec G. Durocher (Montréal)	86,102
Simkin, D. Chemistry McGill	Circular dichrometer-optical rotatory dispersion spectrometer * with T.H. Chan, R.K. Odilivie, D.G. Gray, A. Shaver, B. Belleau, A.S. Ferlin (McGill)	124,799	Stewart, M.P. Infor. & rech opér. Montréal	Computer upgrade * avec G.V. Bochmann, E. Cerny, D. Thalmann, J. Vaucher (Montréal)	46,486
St-pierre, L.E. Chemistry McGill	Peptide synthesizer * with B. Belleau (McGill)	72,532	Guest, J.D. Chemistry Montréal	Gas chromatograph	24,701
Trischuk, J.M. Physics McGill	Computer for McGill experimental high energy physics group * with S. Conetti, C. Leroy, P.M. Patel, D.G. Ryan, D.G. Stairs (McGill)	270,992	Desjardins, R. Génie civil Ecole Polytechnique	Analysateur d'ions * avec C.E. Delisle, R. Labonté (Ecole Poly.)	24,500
Vip, G.L. Electrical Eng. McGill	Measurement equipment for fiber and integrated optics	33,967	Dickson, J.I. Génie métal. Ecole Polytechnique	Appareillage d'émission acoustique * avec J.P. S. Bailion (Ecole Poly.)	8,250
Bain, J.F. Plant Science Macdonald Coll.	UV/Visible scanning spectrophotometer * with J.P. Peterson, C. Chong, R. P. Grant (Macd. Coll.)	21,455	Gagne, J.M. Génie-Physique Ecole Polytechnique	Signaître * avec G. Perrault (Montréal)	14,000
Knowles, R. Microbiology Macdonald Coll.	High pressure liquid chromatograph * with D.P. Miven, R.H. Macleod (Macd. Coll.)	25,000	Wachsan, M. Génie Electrique Ecole Polytechnique	Analysateur de raseaux	24,337
Pritchard, R.F. Parasitology Macdonald Coll.	APLC analytical system	61,585	Olivier, G. Génie Electrique Ecole Polytechnique	Enregistreur à plume rectilinéaire - Oscilloscope * avec G. Roy, G.E. April, P.P. Bouchard (Ecole Poly.)	22,000
Betteridge, R.J. Médecinevét. Montréal	B-scan ultrasonic echograph * avec M. Marcoux, P. Guay (de Montréal)	23,250	Piron, D.L. Génie métal. Ecole Polytechnique	Système de mesure des paramètres de cinétique d'électrode	24,052
Breher, J.L. Physique Montréal	Remplacement de la tête de laser à excimère	14,606	Pousselle, J. Génie civil Ecole Polytechnique	Micro-ordinateur (PC/XT) * avec P. Brière, R. Desjardins (Ecole Poly.)	11,010
Cochran, R.W. Physique Montréal	Système à pulvérisation cathodique * avec J.P. Breher, J. Desautry (Montréal), R.B. Mair, J.O. Strom-Olsen (McGill)	108,547	Tinawi, R. Génie civil Ecole Polytechnique	Micro-ordinateur	4,600
Florian, M. Ctr rech. Montréal	Upgrade of the microcomputer * avec J.M. Rousseau (Montréal)	14,000	Bellonci, S. Ctr. Rech.-Vitrol. Québec - IAP	Ensemble de rotors pour ultracentrifugeuse * avec M. Trudel, L. Berthiaume, J.P. Descôteaux (IAP)	14,716
Florian, M.A. Ctr rech. Montréal	Colour graphic terminal * avec G. Lapalme, S. Nguyen, J.M. Rousseau (Montréal)	39,460	Lacroix, M. Ctr. Rech.-Vitrol. Québec - IAP	Peptide synthesizer and accessories * avec J.M. Dupuy, L. Thibodeau (IAP), M. Sonnenberg (McGill)	32,916
Gingras, G. Biochimie Montréal	Spectrophotomètre enregistreur * avec I. Har (Montréal)	48,000	Adoul, J.P. Génie Electrique Sherbrooke	Ensemble de saisie et de prétraitement d'images et de télescopes * avec S. Richard (Sherbrooke)	35,856
Hanessian, S. Chimie Montréal	Spectrophotomètre UV/visible modèle Lambda 7 * avec H. Dugas, D. Gravel, R. Stollon, J.D. Vuest (Montréal)	29,629	Bergeron, J.M. Biologie Sherbrooke	Véhicule tout terrain	10,349
Hubert, J. Chimie Montréal	Spectromètre à transformée de fourier et générateur de plasmas micro-onde à haute puissance * avec M. Moisan (Montréal)	104,790	Pom, P.J. Géographie Sherbrooke	Muétisateur d'images et de cartes pour le système d'analyse d'images numériques * avec J.M. Dubois, Q.H. J. Gwyn, A. Poyer, D.P. Morin, J.P. Adoul, S. Richard (Sherbrooke)	52,140
Peters, J. Ctr. de rech math Montréal	Microordinateur de recherche	12,800	Pontin, M. Génie Electrique Sherbrooke	Générateur ajustable de signaux modulés en amplitude et/ou en phase * avec S. Morissette (Sherbrooke)	26,084

Brézin, M. Génie mécanique Sherbrooke	7,425	Capteur de force et accessoires * avec P. Bourassa (Sherbrooke)	Shapiro, S. Chemistry Concordia	Position-sensing proportional counter for radiochromatograms and radioelectrophoretograms	33,870
Carlone, C. Physique Sherbrooke	56,434	Spectromètre, source et détection ultraviolet	Stathopoulos, T. Cité-Build. Stud. Concordia	Wind tunnel pressure measurement instrumentation * with C. Marsh (Concordia)	39,756
Chornet, P. Génie chimique Sherbrooke	53,568	Construction d'un réacteur à jet et instrumentation pour l'acquisition rapide de données expérimentales	Suen, C.-Y. Computer Science Concordia	Multi-font optical reader * with R. Shinghal (Concordia)	24,596
Lasia, A. Chemistry Sherbrooke	23,716	1) IBM personal computer, (ordinateur personnel IBM) 2) Dry box and vacuum pump (boîte sèche et pompe à vide)	Vo-Yan, T. Math/physique Moncton	Système de vide pour l'étude des films minces * avec P. Girouard, P. L. Banerjee, G. Bosi (Moncton)	68,240
Lesel, P. Biologie Sherbrooke	9,370	Motor à angle fixe pour ultracentrifugeuse (50 Ti) * avec A. Beaudoin, G. G. Poirier (Sherbrooke)	Baerlocher, P. J. Biology Mount Allison	Stereo microscope with camera	9,000
Payre, G. Génie mécanique Sherbrooke	60,000	Station de Travail * avec P. Bourassa, M. Brézina, K. Galanis, M. Massoud (Sherbrooke)	Thompson, P. G. Biology Mount Allison	Liquid scintillation spectrometer	24,463
Poirier, G. Biologie Sherbrooke	36,206	Ultracentrifugeuse * avec D. Lebel, A. R. Beaudoin, A. Lord (Sherbrooke)	ARP, P. A. Forest Resources New Brunswick	Automatic titration system	15,290
Poirier, M. Physique Sherbrooke	17,364	Digitaliseur programmable	Derenyi, E. E. Surveying Eng New Brunswick	Image analysis system components * with S. Z. Masry, P. W. Heif (UNB)	40,600
Roy, C. Génie chimique Sherbrooke	23,500	Détecteur automatique des matières volatiles, de l'humidité et des cendres * avec E. Chornet (Sherbrooke)	Doraisvaai, P. Electrical Eng. New Brunswick	Multi-processor ultraviolet control system * with R. Balasubramanian, M. E. Kaye (UNB)	27,308
Hanna, A. Civil Engineering Concordia	35,202	Foundation testing facilities	Keppie, D. M. Biological New Brunswick	Vehicle	14,613
Hoa, V. S. Mechanical Eng. Concordia	39,177	Acoustic emission machine for damage study of materials and structures * with T. S. Sankar, A. P. Blach (Concordia)	Kurz, B. J. Computer Science New Brunswick	Color graphic recording system * with Z. E. Derenyi (UNB)	19,161
Ibrahim, R. K. Biology Concordia	40,033	High performance liquid chromatography system (HPLC)	Lenard, J. G. Mechanical Eng. New Brunswick	High temperature, high rate of strain testing facility * with R. E. Machin (UNB)	43,940
Krepec, T. Mechanical Eng. Concordia	43,600	Equipment for testing of combustion engines * with S. Lin, C. C. Kozicki, R. H. Cheng, J. V. Svoboda (Concordia)	McKinnon, B. M. Biology New Brunswick	Research microscope with camera attachment	24,108
Langford, C. H. Chemistry Concordia	37,093	Thermal lensing spectrometer system	Parker, P. A. Electrical Eng. New Brunswick	Signal analyser * with R. E. Gander, R. N. Scott (UNB)	43,476
McKay, J. Computer Science Concordia	40,000	Digital phototypesetter * with P. Briatley (Montreal), C. Y. Suen, P. De Mori (Concordia)	Susak, N. J. Geology New Brunswick	Rh - X-ray fluorescence tube * with P. F. Williams, D. J. Bachinski, A. L. McAllister, L. T. Trebath, S. L. W. Bachinski (UNB)	8,745
Meaney, M. J. Psychology Concordia	7,413	Autoradiographic analysis of hormone receptors: frozen tissue storage	Susak, N. J. Geology New Brunswick	Hydrothermal solubility system	51,469
Newman, P. B. Biology Concordia	14,404	Recording spectrophotometer * with M. R. Harrington, J. R. Fraser (Concordia)	Targuilla, J. M. Electrical Eng. New Brunswick	Satellite receiver	15,417

Valenta, Z. Chemistry New Brunswick	17,259	New interface/data system for mass spectrometer * with K. Wiesner, J. A. Findlay, J. Passmore, M. A. Lewis (UNB)	Leavis, K. G. Mining/Metallurgy Tech. Univ. N.S.	Gas analysis facility	12,040
White, P. S. Chemistry New Brunswick	237,764	Single crystal X-ray diffractometer and associated computing facilities * with P. Bottomley, J. A. Findlay, M. A. Lewis, J. Passmore, Z. Valenta (UNB)	Mahotra, S. K. Civil Engineering Tech. Univ. N.S.	Data acquisition system for measurements of strains, displacements and loads	24,865
Woon, T. W. Mar. Sc. Res. Lab Hantsash Marine	63,000	Aquatic holding facility	Stratton, G. W. Biology N.S.A.C.	Liquid scintillation counter	23,800
Toews, P. P. Biology Acadia	16,990	Digital titration system	Arockiasary, M. Eng./Applied Sci. Memorial	Testing (fatigue, impact and static) of offshore/onshore structural elements * with J. P. Gale, D. B. Ruggeridge, M. Botton, J. Wolgaard, P. M. Smith, A. J. Christian (Memorial)	272,092
Arnold, D. R. Chemistry Dalhousie	86,866	GC/MS system	Bal, A. K. Biology Memorial	Scanning electron microscope with dispersive X-ray microanalysis system and detector * with P. A. Nolan, D. H. Steele, V. J. Steele, C. R. Barnes, L. E. Zahraeus, R. W. Hiscott, R. P. James (Memorial)	180,000
Chatt, A. Chemistry Dalhousie	124,877	High-resolution gamma-and alpha-ray spectroscopy system * with D. E. Ryan (Dalhousie)	Crim, L. W. Mar. Sc. Res. Lab Memorial	Auto gamma radiation measurement system * with D. R. Didier, G. L. Fletcher (Memorial)	33,000
Klein, P. M. Psychology Dalhousie	26,000	Laboratory computer system	Fletcher, G. L. Mar. Sc. Res. Lab Memorial	Ultracentrifuge rotors * with D. P. Idler, J. B. Truscott (Memorial)	19,943
Macrae, I. R. Biology Dalhousie	46,000	Ultracentrifuge and one rotor * with P. W. Lee, R. I. Schrempf, L. C. Vining (Dalhousie)	Gordon, P. Biology Memorial	Inverted microscope with photographic attachment	10,988
Mayer, L. A. Oceanography Dalhousie	99,703	R seismic reflection profiling system * with R. Boyd, K. E. Louden (Dalhousie)	Haedrich, B. L. Biology Memorial	Portable microcomputer system	8,950
Meinhertzhagen, I. A. Psychology Dalhousie	24,600	Ultramicrotome * with S. R. Shaw, M. G. Yoon (Dalhousie)	Hasinoff, B. B. Chemistry Memorial	Stopped-flow apparatus	13,864
Mills, P. L. Oceanography Dalhousie	13,280	Laboratory flame instrumentation * with D. A. Mantley (Dalhousie)	Macko, S. A. Earth Sciences Memorial	Ion trap detector	46,000
Moore, R. H. Oceanography Dalhousie	7,644	Visible-ultraviolet spectrophotometer and accessories	Montevicchi, M. A. Psychology Memorial	Rubber inflatable boat * with A. Burger (Memorial)	11,541
Reynolds, P. R. Physics/Geology Dalhousie	23,075	Argon ion laser	Hungeridge, D. B. Eng./Applied Sci. Memorial	Tow tank dynamometer and ship model propulsion system * with M. Brockiasay, D. A. Fris, C. C. Hsiung, T. A. Achtardes (Memorial)	69,242
Stroink, G. Physics Dalhousie	169,000	Helium liquefier * with B. L. Blackford, R. A. Dunlap, M. R. Jericho, D. L. Hooper, M. A. White (Dalhousie)	Rahman, M. A. Electrical Eng. Memorial	Variable voltage, variable frequency, three phase, 50kW pulse-width modulated inverters * with J. E. Qualicoe (Memorial)	25,000
Vining, L. C. Biology Dalhousie	10,725	French pressure cell and motorized press * with R. A. Lee, P. G. Brown (Dalhousie)	South, G. R. Biology Memorial	Epi-fluorescence spectrophotometric equipment * with A. Whittick (Memorial)	11,812
Wasylishen, R. E. Chemistry Dalhousie	275,000	High power multinuclear magnetic resonance spectrometer * with B. J. Forrest (Dalhousie)	Thompson, L. K. Chemistry Memorial	Cyclic voltammetry equipment and accessories * with B. S. Ramaswamy (Memorial)	14,737
Laufer, E. P. Mining/Metallurgy Tech. Univ. N.S.	20,000	Metallurgical microscope			



COMMUNIQUÉ



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RESULTS OF THE 1984-85 COMPETITION FOR SCHOLARSHIPS AND FELLOWSHIPS

The Natural Sciences and Engineering Research Council (NSERC) has again offered a record number of awards to graduate students and postdoctoral fellows in the natural sciences and engineering at Canadian universities.

As a result of its annual competition, Council has offered 2,863 Postgraduate Scholarships to students working towards a higher degree. This is an increase of 15% over the number of awards offered last year. Among these awards, 16 are specifically for graduate training in science librarianship and documentation. Postgraduate scholarships are valued at \$11,100 (to be increased to \$11,600 effective 1 September 1984). 1967 Science and Engineering Scholarships, Council's most prestigious awards for graduate students, have been offered to 144 outstanding students to enable them to pursue graduate studies and research leading to a doctorate. This number represents a 15% increase over the number offered last year. These scholarships are currently valued at \$16,700 rising to \$17,500 on 1 September 1984. In addition, Council has offered 193 postdoctoral fellowships valued at \$22,250 (\$23,300 effective 1 September 1984), to provide recent doctoral graduates with an opportunity to add to their research experience.

Investment in the development of the nation's intellectual capital is a critical prerequisite for an effective national R & D effort. The Council is

RÉSULTATS DU CONCOURS DE BOURSES DE 1984-1985

Le Conseil de recherches en sciences naturelles et en génie (CRSNG) a, cette année encore, offert un nombre record de bourses à des étudiants à la maîtrise ou au doctorat et à des stagiaires postdoctoraux des universités canadiennes.

Lors de son concours annuel, le Conseil a offert 2 863 bourses d'études supérieures à des étudiants qui travaillent en vue d'obtenir une maîtrise ou un doctorat en sciences naturelles ou en génie, soit une augmentation de 15% par rapport à l'an dernier. La valeur de ces bourses s'élève à \$11 100 (et sera portée à \$11 600 le 1^{er} septembre 1984). Notons que 16 de ces bourses sont plus spécifiquement destinées à des étudiants en bibliothéconomie et documentation scientifiques. Le CRSNG a également offert la bourse en sciences et en génie 1967, la distinction la plus prestigieuse qu'il accorde aux étudiants aux 2^e et 3^e cycles, à 144 étudiants exceptionnels inscrits à un programme de doctorat. Ce nombre représente une augmentation de 15% par rapport à l'an dernier. Ces bourses valent actuellement \$16 700 et vaudront \$17 500 le 1^{er} septembre 1984. Enfin, le Conseil a offert 193 bourses postdoctorales de \$22 250 (\$23 300 à partir du 1^{er} septembre 1984) qui donnent à des personnes ayant récemment obtenu leur doctorat l'occasion d'ajouter à leur expérience en recherche.

Un effort national efficace en R et D dépend fortement de l'investissement dans le développement du capital intellectuel canadien. Le Conseil est donc

therefore encouraged that, as a result of the priority it has given to research manpower programs, there has been a dramatic increase both in the response to these programs and in the quality of the applicants over the last two years. The potential total expenditure for the scholarships and fellowships listed above for the fiscal year 1984-85 is \$33.7 million. The currently approved budget for all NSERC research training awards is approximately \$50 million.

For further information on NSERC's scholarships programs, please contact:

Arnet Sheppard
Information Officer
Natural Sciences and Engineering
Research Council
Ottawa, Ontario
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(613) 995-5992

The listings of the Postgraduate Scholarship, 1967 Science and Engineering Scholarship, and Postdoctoral Fellowship winners are available upon request. These listings include new and renewal awards.

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heureux de constater que la priorité qu'il a attachée à ses programmes de formation de chercheurs a donné lieu à une augmentation considérable du nombre de demandes de bourses et de la qualité des candidats depuis deux ans. Les dépenses totales prévues pour les bourses énumérées plus haut s'élèvent à \$33,7 millions, pour l'année financière 1984-1985. Le budget actuel approuvé pour l'ensemble des programmes de formation de chercheurs du CRSNG s'élève à environ \$50 millions.

Pour de plus amples informations sur les programmes de bourses du CRSNG, veuillez communiquer avec:

Arnet Sheppard
Agent d'information
Conseil de recherches en sciences
naturelles et en génie
Ottawa, Ontario
K1A 1H5

(613) 995-5992

Les listes des bénéficiaires des bourses d'études supérieures, des bourses en sciences et en génie 1967 ainsi que des bourses postdoctorales sont disponibles sur demande. Ces listes comprennent les nouvelles bourses et les renouvellements accordés.

mai 1984



For/À titre d'

INFORMATION

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NSERC AWARDS 12 INDUSTRIAL POSTGRADUATE SCHOLARSHIPS

Twelve scientists and engineers currently working in Canadian industry have been awarded Industrial Postgraduate Scholarships in the first competition for these awards, announced Gordon M. MacNabb, President of the Natural Sciences and Engineering Research Council (NSERC).

The Industrial Postgraduate Scholarships (IPGS) program was recently launched as the newest addition to NSERC's wide range of programs designed to promote industry/university cooperation in R&D and in research training.

The program is aimed at enhancing the research, development and innovative capability of Canadian industry, and increasing its commitment to R&D and to research training in Canadian universities. Industrial scientists and engineers are encouraged to upgrade their R&D capabilities by enrolling in a program of graduate studies at the masters' or doctoral level in a Canadian university.

LE CRSNG ACCORDE 12 BOURSES INDUSTRIELLES D'ÉTUDES SUPÉRIEURES

Pour la première fois, douze scientifiques et ingénieurs qui travaillent actuellement dans l'industrie au Canada ont reçu une bourse industrielle d'études supérieures, a annoncé M. Gordon MacNabb, président du Conseil de recherches en sciences naturelles et en génie (CRSNG).

Le programme de bourses industrielles d'études supérieures a été créé récemment et constitue le dernier-né de la vaste série de programmes du CRSNG destinés à favoriser la collaboration entre l'industrie et les universités en matière de R et D et de formation de chercheurs.

Ce programme a pour but de stimuler la recherche, le développement et la capacité d'innovation de l'industrie canadienne et d'amener cette dernière à participer davantage à la R et D et à la formation de chercheurs dans les universités canadiennes. Ce programme encourage les scientifiques et les ingénieurs du secteur industriel à perfectionner leur compétence en matière de R et D, en s'inscrivant à un programme de maîtrise ou de doctorat dans une université canadienne.

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The scholarships are awarded for 12 months and may be renewed for a second period of 12 months. Contributions by the company to the value of the scholarships are matched by NSERC up to a maximum amount of \$11,100, the value of a regular NSERC postgraduate scholarship.

A list of winners of the recent competition is appended.

Companies wishing to participate in this program should contact NSERC's Scholarships Office for additional information at (613) 993-2454.

March 1984

La bourse est valide pour 12 mois et peut être renouvelée pour une seconde période de 12 mois. La contribution du CRSNG est égale à celle de la compagnie mais n'excédera pas \$11 100, soit la valeur d'une bourse d'études supérieures régulière du CRSNG.

On trouvera ci-joint la liste des boursiers choisis lors du récent concours.

Les entreprises qui désirent participer à ce programme devraient communiquer avec le Bureau des bourses du CRSNG pour de plus amples informations, au (613) 993-2454.

mars 1984

INDUSTRIAL POSTGRADUATE SCHOLARSHIPS
BOURSES INDUSTRIELLES D'ÉTUDES SUPÉRIEURES

December 1983/décembre 1983

<u>Name/Nom</u>	<u>Company/Compagnie</u>	<u>Location of Tenure/ Lieu de validité</u>
Alberta		
LABINE, C.L.	Campbell Scientific Canada Corp.	Univ. of Alberta, Geography
RICKETTS, D.R.	Morrison Hershfield Ltd.	Univ. of Alberta, Civil Engineering
Ontario		
KUN, R.D.	Bell-Northern Research Ltd.	Carleton Univ., Systems & Computer Eng.
TAUZOVICH, B.	Quasar Systems Ltd.	Carleton Univ., Systems & Computer Eng.
MURPHY, M.J.	Northern Telecom Canada Ltd.	McMaster Univ., Management Sc./Systems
CALVE, L.R.	Forintek Canada Corp.	Univ. of Ottawa, Chemistry
VAUGHAN, C.J.	A-Cubed Inc.	Univ. of Toronto, Physics
CHAN, H.N.S.	Bell-Northern Research Ltd.	Univ. of Waterloo, Systems Design
JOHNSTON, H.M.	Ontario Hydro	Univ. of Waterloo, Earth Sciences
ROSS, N.E.	Bell-Northern Research Ltd.	Univ. of Waterloo, Management Sciences
Québec		
OUELLET, L.M.	Polyplasma Inc.	École Polytechnique, Génie physique
MEGRAW, S.R.	Domtar Inc.	McGill Univ., Microbiology



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SIXTY-TWO YOUNG CANADIANS OFFERED RESEARCH OPPORTUNITIES

Ottawa - Sixty-two young researchers will embark on a career in university R & D with the assistance of the Natural Sciences and Engineering Research Council (NSERC), announced Gordon MacNabb, President of NSERC.

Following a rigorous review of 259 nominations, 62 new university research fellowships have been awarded by NSERC to promising young scientists and engineers. The awards are intended to strengthen Canada's university R & D effort and to place highly qualified researchers in Canadian universities to help meet the expected demand for new faculty appointments in the early 1990's.

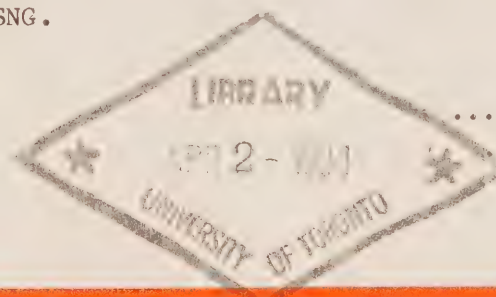
Fellows, who must hold a doctorate and have several years postdoctoral research experience, are appointed to a research position at a Canadian university equivalent to that of an Assistant Professor. The fellowship includes a maximum salary contribution by NSERC of \$30,500 per annum for up to five years. Fellows also benefit from NSERC research grants.

SOIXANTE-DEUX JEUNES CANADIENS REÇOIVENT DES BOURSES DE RECHERCHE

Ottawa - Le Conseil de recherches en sciences naturelles et en génie (CRNSG) aidera soixante-deux jeunes chercheurs à entreprendre une carrière en R et D universitaire, a annoncé le Président du Conseil, M. Gordon MacNabb.

Après un examen rigoureux des 259 candidatures soumises, le CRSNG a conféré le titre de chercheur-boursier universitaire à 62 jeunes scientifiques et ingénieurs d'avenir. Ces bourses visent à renforcer l'effort de R et D universitaire au Canada et à permettre à d'excellents chercheurs de travailler dans les universités canadiennes, dans l'espoir qu'ils pourront combler les postes de professeurs qui s'ouvriront au début des années quatre-vingt-dix.

Les boursiers, qui doivent détenir un doctorat et avoir acquis plusieurs années d'expérience postdoctorale en recherche, sont nommés dans une université canadienne à un poste de chercheur équivalent à celui d'un professeur adjoint. La bourse consiste en une contribution annuelle maximum du CRSNG de \$30 500, pouvant durer jusqu'à cinq ans. Les boursiers reçoivent également une subvention de recherche du CRSNG.



The University Research Fellowships program, which was launched in 1980, has already proven very successful. The 356 awards offered to date represent a growing pool of highly skilled young researchers in Canadian universities. "In many fields, especially in the advanced technologies, these young researchers are already emerging as leaders of university research endeavour", said Gordon MacNabb.

Since the beginning of the program, over one-third of the fellowships have been awarded to young scientists and engineers who had left Canada to further their research training or begin a research career abroad. Indeed, of the sixty-two new awards announced, 28 are to researchers currently outside Canada who will now be returning to take up their new positions. "While the program is not necessarily aimed at recovering some of our exported talent, its success in that regard is an achievement for which the Council is very proud", said Gordon MacNabb.

A listing, by region, of recent winners is attached. A complete listing of research fellows appointed since 1980 including titles of research projects, is available upon request.

For further information, contact:

The Communications Division
NSERC
(613) 993-3659.

March 1984

Lancé en 1980, le programme de chercheurs-boursiers universitaires s'avère déjà une réussite. Jusqu'ici, le Conseil a nommé 356 boursiers, contribuant ainsi à constituer dans les universités canadiennes un bassin de jeunes chercheurs très compétents. "Dans bien des domaines, et plus particulièrement dans les technologies de pointe, ces jeunes chercheurs se distinguent déjà comme les chefs de file de la recherche universitaire," a déclaré M. MacNabb.

Depuis le début du programme, plus du tiers des bourses ont été accordées à de jeunes scientifiques et ingénieurs qui avaient quitté le Canada pour poursuivre leur formation ou pour entreprendre une carrière en recherche. Il en est de même cette année: en effet, 28 des 62 nouveaux boursiers sont actuellement à l'étranger et reviendront au Canada occuper leur poste. "Le programme n'a pas comme but premier de rapatrier le talent expatrié, mais le fait qu'il y contribue est une réalisation dont le Conseil est très fier", a ajouté M. MacNabb.

On trouvera ci-joint une liste des boursiers par région. On peut se procurer sur demande une liste de tous les boursiers nommés depuis 1980 ainsi que les titres de leur projet de recherche.

Pour de plus amples informations, veuillez communiquer avec:

La Direction des communications
CRSNG
(613) 993-3659.

mars 1984

UNIVERSITY RESEARCH FELLOWS/CHERCHEURS-BOURSIERS UNIVERSITAIRES
1984

Name/Nom	Title/Titre
Department/Département	
University/Université	
Routilier, R. G. Zoology British Columbia	Factors affecting the control and coordination of erythrocytic pH
Orvig, C. E. R. Chemistry British Columbia	Medically-related coordination chemistry of aluminum
Eastwell, K. C. Biology, Sciences Simon Fraser	Replication of strawberry crinkle virus
Agathoklis, P. Electrical Eng. Victoria	Design and implementation of two-dimensional systems with applications in image processing and delay-differential systems
Skelton, F. W. Psychology Victoria	The role of the deep cerebellar nuclei and the red nucleus in learning and memory
Wan, P. C. F. Chemistry Victoria	Photogenerated reactive intermediates and their application to organic chemistry
Baracos, V. E. Animal Science Alberta	Control of growth and atrophy of skeletal muscle
Hannon, S. J. Zoology Alberta	Effect of behaviour on population regulation and mating system in northern birds
Pozmus, W. Physics Alberta	plasma theory: Laser-plasma interactions

Name/Nom	Title/Titre
Department/Département	
University/Université	
Owen, R. F. Biology Calgary	Sex ratio evolution in bumble bees (<i>Bombus</i> spp.)
Clouthier, D. J. Chemistry Saskatchewan	Studies of the excited states of organo-phosphorus, organo-selenium, and boron compounds
Markham, P. J. F. Veter. Microbiol Saskatchewan	Colonization of cattle with <i>Pasteurella haemolytica</i>
Edie, S. A. Plant Science Manitoba	Interactions between photosynthesis and symbiotic nitrogen fixation in <i>Vicia faba</i> L
Gulak, P. G. Electrical Eng. Manitoba	Embedding digital communication and pattern recognition algorithms in silicon
Girczyc, E. F. Electronics Carleton	Automatic realization of Ada circuit descriptions
Brooks, B. L. Physics Guelph	Raman spectroscopy of beam-irradiated cryogenic molecular solids
Gwynne, D. T. Biology McMaster	The evolution of sexual differences in the Orthoptera
Lee, T. D. Physical Education McMaster	Contextual interference and practice variability in motor skill acquisition

Name/Nom Department /Département University/Université	Title/Titre
Wilson, J.C. Civil Engineering McMaster	Seismic response of long-span highway bridges
Hincke, M.T.C. Anatomy Ottawa	Second messenger calcium pathways during parotid secretion
Hazlett, J.D. Chemical Eng. Queen's	Fluidized bed behaviour in relation to coal combustion
Jarrell, K.F.J. Micro/Immunology Queen's	Structure and function of methanogen membranes
Schulze, D.J. Geological Sciences Queen's	Investigation of mantle-derived xenoliths and xenocrysts from kimberlites and other alkaline rocks
Bailey, D.C. Physics Toronto	Study of proton-antiproton interactions at rest / accelerator studies
Morronegiello, B.A. Psychology Toronto	The development of sound localization in human infants
Perrin, A.P. Metal/Mat. Science Toronto	Strengthening mechanisms of niobium-based steels
Pudaz, S. Physique Toronto	Phenomenological studies of unified gauge theories

Name/Nom Department/Département University/Université	Title/Titre
Schacter, D.L. Psychology Toronto	Dissociations among forms of knowledge in normal and abnormal memory
Trick, C.G. Environmental Stud. Toronto	Iron assimilation system in dinitrogen fixing cyanobacteria
Turkington, B. E. Mathematics Toronto	Non-linear partial differential equations in fluid dynamics
Vannelli, A. Industrial Eng. Toronto	Decomposition of large-scale systems/stability of large-scale systems
Wise, M. B. Physics Toronto	Particle physics beyond the standard model
Campbell, M. C. W. Optometry Waterloo	Analysis of the optical image quality on the retina of the eye
Hoff, R. Mechanical Eng. Waterloo	Analysis of dynamic fracture and crack arrest/structural optimization
Goldman, S. P. Physics Western Ontario	Relativistic and quantum electrodynamic calculations in atomic physics
Jardine, J. F. Mathematics Western Ontario	The isomorphism conjecture for algebraic groups

Name/Nom Department/Département University/Université	Title/Titre
Golding, G.B. Biology York	Effects of local DNA structure on mutation and the evolutionary implications of non random mutation
Kunz, B. A. Biology York	DNA sequence analysis of induced mutation in yeast
Link, R. Physics York	Thermospheric/ionospheric photochemical processes, energetics and dynamics
Potvin, P.G. Chemistry York	Distorted ligands and complexes of biological interest
Fortier, M. A. Médecine Laval	Etude in vitro de la reconnaissance précoce de la gestation chez le lapin et le bovin
Schluter, D. Biology McGill	Ecology and morphology of continental finch communities
Wong, Y. S. Math/Statistics McGill	Computational fluid dynamics: High-order numerical solutions for partial differential equations
Saint-Aubin, Y. Centre de rech math Montréal	Théories de champs complètement intégrables (aspects classique et quantique)
Talbot, P. Ctre. Rech.-Virolog. Québec - IAF	Etudes immunobiologiques sur les coronavirus

Name/Nom Department/Département University/Université	Title/Titre
Nguyen-Dang, T. T. Chimie Sherbrooke	Etude approfondie de la dynamique des molécules habillées
Piché, Y. Biologie Sherbrooke	Developmental studies of mycorrhizal associations
Denes, G. V. M. Chemistry Concordia	Structural studies of stannous compounds and characterization of novel forms of ferric hydroxide
Aksu, A. F. Str. Marine Geol. Dalhousie	Cainozoic, paleoclimatic and paleoceanographic investigation of the Arctic Ocean, Baffin Bay and the Labrador Sea
Thompson, K. P. Oceanography Dalhousie	Sea level and the circulation of the North Atlantic and adjacent shelf seas
Lobel, P. B. Mar. Sc. Res. Lab Memorial	Biochemical individuality in the toxicology of metals to mussels

The following researchers were also offered a university research fellowship. However, the university tenure has yet to be confirmed./Les chercheurs suivants ont également obtenu un poste de chercheur-boursier universitaire. Cependant, l'endroit de validité de la bourse n'est pas encore confirmé.

<u>Name/Nom</u>	<u>Title of Research Project/ Titre du projet de recherche</u>
Becke, A.D.	Density functional theory of atomic and molecular structure
Heinekey, D.M.	Transition metal organometallic chemistry-synthesis and reaction mechanisms
Holdom, B.	Extensions of the standard model of elementary particles
Mann, R.B.	Investigations of bose-fermi symmetry and extra dimensions
McCall, M.L.	The chemistry of galaxies
Mingo, J.A.	Topological methods in operator algebras
Murty, V.P.	Arithmetic algebraic geometry
Shelp, B.J.	Nitrogen metabolism in legumes: Pathways of ureide and arginine metabolism
Sivakumaran, K.S.	Wind induced vibration of transmission lines
Wardlaw, D.M.	Theoretical studies of molecular phenomena using classical, semiclassical and quantum mechanics
Yee, H.K.C.	The global and local environments of quasars and active galaxies



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NEW APPOINTMENTS TO NSERC STAFF

Two new appointments were announced today by Gordon M. MacNabb, President of the Natural Sciences and Engineering Research Council (NSERC). Dr. Claude Lajeunesse has been appointed Director of Targeted Grants Programs and Dr. Robert J. Kavanagh has been appointed Director of Research Manpower Programs.

The new positions have arisen out of a reorganization of the Programs Branch which will enable the Council to expand and strengthen its initiatives in the training of research manpower and in joint university-industry research. NSERC's increased responsibilities in this latter area were announced by the Minister of State for Science and Technology, Donald Johnston, on January 25th as part of the government's Technology Policy.

Dr. Claude Lajeunesse and Dr. Robert Kavanagh, well-known figures in the engineering and academic communities, will take up their positions on February 13 and July 1, 1984, respectively. They will share the responsibilities for NSERC's Programs Branch, which has an annual budget of

NOMINATIONS AU SEIN DU PERSONNEL DU CRSNG

Gordon M. MacNabb, président du Conseil de recherches en sciences naturelles et en génie (CRSNG), a annoncé aujourd'hui deux nominations au sein du personnel du CRSNG. Le Dr Claude Lajeunesse a été nommé directeur des programmes de subventions de recherche orientée et le Dr Robert J. Kavanagh, directeur des programmes de formation de chercheurs.

Ces deux nouveaux postes découlent d'une réorganisation de la direction des programmes, ce qui permettra au Conseil d'élargir et d'intensifier ses activités d'aide à la formation de chercheurs et à la recherche conjointe entre les universités et les industries. Les responsabilités du CRSNG en ce domaine, qui font partie de la politique technologique du gouvernement, ont été annoncées le 25 janvier par l'honorable Donald Johnston, ministre d'État chargé des Sciences et de la Technologie.

MM. Lajeunesse et Kavanagh, personnalités bien connues des ingénieurs et des universitaires canadiens, entreront en fonctions le 13 février et le 1^{er} juillet 1984 respectivement. Ils partageront les responsabilités de la Direction des programmes du CRSNG dont le budget

approximately \$275 million, with Janet Halliwell, Director of Grants Programs.

annuel est d'environ \$275 millions avec Mme Janet Halliwell, directrice des programmes de subventions

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Brief biographies of the new directors are attached.

On trouvera ci-joint quelques notes biographiques sur les nouveaux directeurs.

For further information please contact the Communications Division at (613) 993-3659.

Pour plus de renseignements, veuillez communiquer avec la Direction des communications à (613) 993-3659.

February 1984

février 1984

Dr. Claude Lajeunesse

Born in Quebec City, Dr. Lajeunesse obtained his B.A.Sc. (Engineering Physics) from École Polytechnique in Montreal in 1965, and his M.A.Sc. and Ph.D. (Nuclear Engineering) in 1967 and 1969 respectively from the Rensselaer Polytechnic Institute in Troy, New York.

From 1970 to 1974 Dr. Lajeunesse held academic appointments at the Université du Québec à Trois-Rivières, including Professor and Head of Engineering Physics, and Head of the Engineering Faculty. Following four years as Head of the Legal Affairs Department, Ordre des ingénieurs du Québec, he joined the Canadian Council of Professional Engineers in 1978 as General Manager, the position he vacated to join NSERC.

Dr. Lajeunesse is a Member of the Association of Professional Engineers of Ontario, a Fellow of the Engineering Institute of Canada, and a Member of the Ordre des ingénieurs du Québec.

As Director of Targeted Grants Programs, Dr. Lajeunesse will have overall responsibility for the Strategic and University-Industry Interface programs.

Le D^r Claude Lajeunesse

Né à Québec, le D^r Lajeunesse a obtenu un B.A.Sc. en génie physique de l'École Polytechnique de Montréal en 1965, une M.A.Sc. (1967) et un Ph.D. (1969) en génie nucléaire au Rensselaer Polytechnic Institute, à Troy (New York).

De 1970 à 1974, le D^r Lajeunesse faisait partie du corps professoral de l'Université du Québec à Trois-Rivières, à titre de professeur et chef de section, génie physique, et de directeur du département d'ingénierie. Après avoir passé quatre ans comme syndic et directeur du service des affaires juridiques à l'Ordre des ingénieurs du Québec, il s'est joint au Conseil canadien des ingénieurs en 1978 à titre de directeur général, poste qu'il occupait jusqu'à tout récemment.

Le D^r Lajeunesse est membre de l'Association of Professional Engineers of Ontario, Fellow de l'Institut canadien des ingénieurs et membre de l'Ordre des ingénieurs du Québec.

À titre de Directeur des programmes de subventions de recherche orientée, le D^r Lajeunesse sera responsable des programmes de subventions thématiques et d'aide à la recherche conjointe entre les universités et les industries.

Dr. Robert Kavanagh

Dr. Kavanagh was born in England and received his early schooling there. In 1953 he obtained his B.Sc. in Electrical Engineering from the University of New Brunswick. His M.A.Sc. and Ph.D. (Electrical Engineering) were obtained from the University of Toronto in 1954 and 1957 respectively. He received his D.I.C. in Electrical Engineering from the Imperial College in London in 1960 after a year as a Postdoctoral Fellow.

Dr. Kavanagh began his academic career in 1960 when he was appointed an Assistant Professor in the Electrical Engineering Department at the University of Toronto. He moved to the Electrical Engineering Department at the University of New Brunswick in 1962 and was made a full Professor in 1968. Following a year's sabbatical at the Ministry of Technology in England, he spent a brief period as an Associate Dean before taking up his present position as Dean of Graduate Studies and Research. This position has been interrupted on two occasions since 1971: 1) from 1978 to 1980 he was Acting Vice President (Academic); and 2) during the 1982-83 academic year he spent 9 months at NSERC as a Visiting Research Officer.

Dr. Kavanagh is a Senior Member of the Institute of Electrical and Electronics Engineers, New York, a Fellow of the New York Academy of Sciences, a Member of the Canadian Research Management Association, and a Member of the Canadian Association of University Research Administrators.

Le Dr Robert Kavanagh

Né en Angleterre, le Dr Kavanagh, a obtenu un B.Sc. en génie électrique à l'Université du Nouveau-Brunswick (1953), une M.A.Sc. (1954) et un Ph.D. (1957) à l'Université de Toronto. Il a reçu un D.I.C. en génie électrique du Imperial College de Londres en 1960 après un stage postdoctoral d'une année.

La carrière universitaire du Dr Kavanagh commença en 1960, alors qu'il devint professeur adjoint de génie électrique à l'Université de Toronto. Il passa au département de génie électrique de l'Université du Nouveau-Brunswick en 1962, où il devint professeur titulaire en 1968. Après une année sabbatique au ministère de Technologie (Grande-Bretagne), il devint vice-doyen, puis doyen de la Faculté des études supérieures et de la recherche, poste qu'il occupe maintenant. Le Dr Kavanagh a été vice-président académique intérimaire de l'Université du Nouveau-Brunswick de 1978 à 1980, il passa neuf mois au CRSNG à titre de chercheur invité en 1982-1983.

Le Dr Kavanagh est Senior Member de l'Institute of Electrical and Electronics Engineers de New York, Fellow de la New York Academy of Sciences, membre de l'Association canadienne de la gestion de la recherche et membre de l'Association canadienne des administrateurs de la recherche universitaire.

Dr. Kavanagh has been associated with NSERC for a number of years and has served on several of its committees, most recently as Chairman of the Research Manpower Task Force.

Le Dr Kavanagh a collaboré avec le CRSNG depuis plusieurs années et a fait partie de certains comités, dont le groupe de travail sur la formation de chercheurs, qu'il a présidé.



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NSERC IDENTIFIES NEW STRATEGIC FIELD

The Natural Sciences and Engineering Research Council has recently identified Industrial Materials and Processes as a new field of support under its Strategic Grants program. This new field brings to eight (8) the total number of areas selected for support. The others are: Biotechnology, Communications and Computers, Energy, Environmental Toxicology, Food/Agriculture, Oceans, and Open. The latter field encompasses areas of national concern that lie outside those specifically identified for support.

The Strategic Grants program was launched in July 1977 to enable university researchers to make contributions towards the understanding or solution of problems of national concern through either specific applied research projects having potential for relatively short-term benefits, or more basic research activities designed to develop knowledge in areas of potential importance. The training of research manpower and the transfer of the technology generated through the program to the user sector are major indicators of the success of the program, which is one of several Council programs aimed at the encouragement of university/industry collaboration.

LE CRSNG AJOUTE UN NOUVEAU DOMAINE THÉMATIQUE

Le Conseil de recherches en sciences naturelles et en génie a récemment ajouté le domaine des matériaux et procédés industriels à son programme de subventions thématiques, ce qui porte à huit (8) le nombre de domaines. Les autres sont l'alimentation et l'agriculture, la biotechnologie, l'énergie, les océans, les télécommunications et l'informatique, la toxicologie de l'environnement et le domaine ouvert. Ce dernier domaine comprend des sujets d'intérêt national autres que les sept thèmes choisis.

Le programme de subventions thématiques a été créé en 1977 pour permettre aux chercheurs universitaires de contribuer à la compréhension ou à la solution de problèmes d'intérêt national, soit grâce à des projets de recherche appliquée pouvant apporter des avantages à relativement court terme, soit grâce à de la recherche plus fondamentale visant à faire avancer les connaissances dans des domaines potentiellement importants. La formation de chercheurs et le transfert de technologies vers le secteur des utilisateurs grâce à ce programme constituent d'excellents indices du succès des subventions thématiques; il s'agit là de l'une des nombreuses activités du Conseil pour encourager la collaboration entre les universités et l'industrie.

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The field of Industrial Materials and Processes was selected because of its strategic importance to Canada's economy and its high industrial content. Research in this field will build on demonstrated competence and interest. Indeed, a review of the present strategic fields revealed that a significant number of applications for strategic grants, in the Open and Energy areas particularly, are in the field of industrial materials and processes. It is hoped that the identification of Industrial Materials and Processes as a strategic field will stimulate university research in this area that has a clearly defined user-directed thrust. The new field includes: materials, processes (catalysts and catalytic processes, and general manufacturing processes), and integrated systems (manufacturing and management).

A complete description of the Industrial Materials and Processes field will be available from university research grants offices in early March.

For further information, contact:

The Communications Division
NSERC
(613) 993-3659.

February 1984

On a choisi le domaine des matériaux et procédés industriels à cause de son importance stratégique pour l'économie canadienne et parce qu'il est très orienté vers l'industrie. Dans ce domaine, la compétence et l'intérêt existent déjà. En effet, en étudiant les domaines thématiques actuels, on s'est rendu compte qu'un nombre important de demandes de subventions thématiques, plus particulièrement dans le domaine de l'énergie et dans le domaine ouvert, relevaient du domaine des matériaux et procédés industriels. On espère donc stimuler la recherche universitaire dans ce domaine qui est clairement orienté vers le secteur des utilisateurs. Le nouveau thème comprend les matériaux, les procédés (catalyseurs et procédés catalytiques et procédés généraux de fabrication) et les systèmes intégrés (fabrication et gestion).

On pourra se procurer la description complète du domaine des matériaux et procédés industriels en s'adressant au responsable de la recherche des universités au début de mars.

Pour de plus amples informations, veuillez communiquer avec:

La Direction des communications
CRSNG
(613) 993-3659

février 1984



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